

FIG. 1A

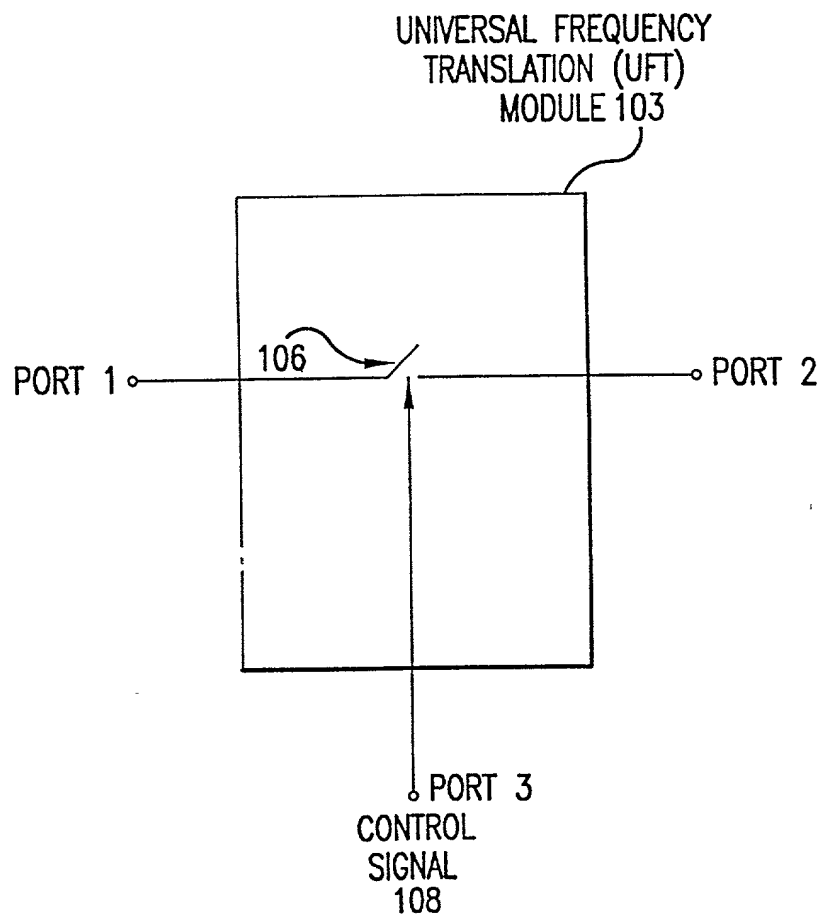


FIG. 1B

TOP SECRET 52904/60

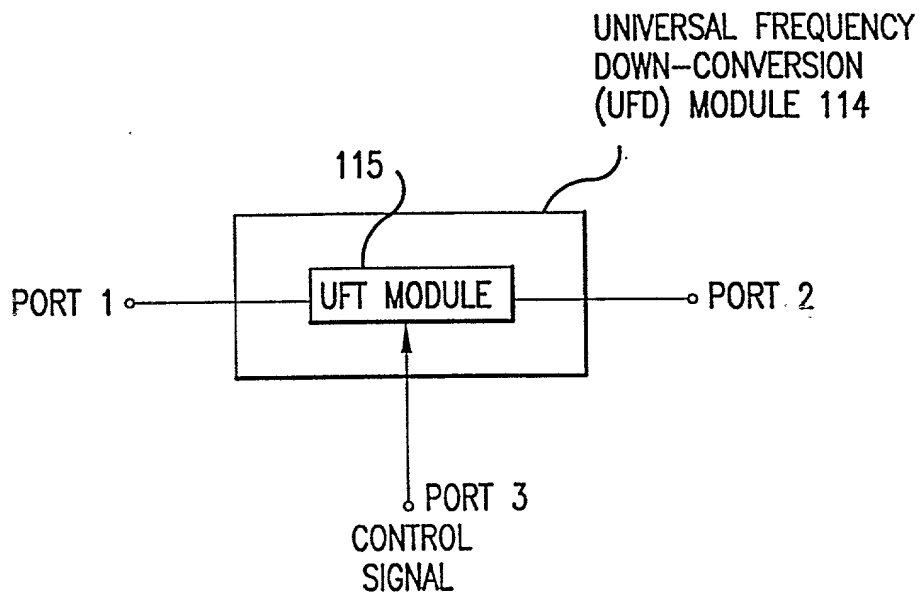


FIG. 1C

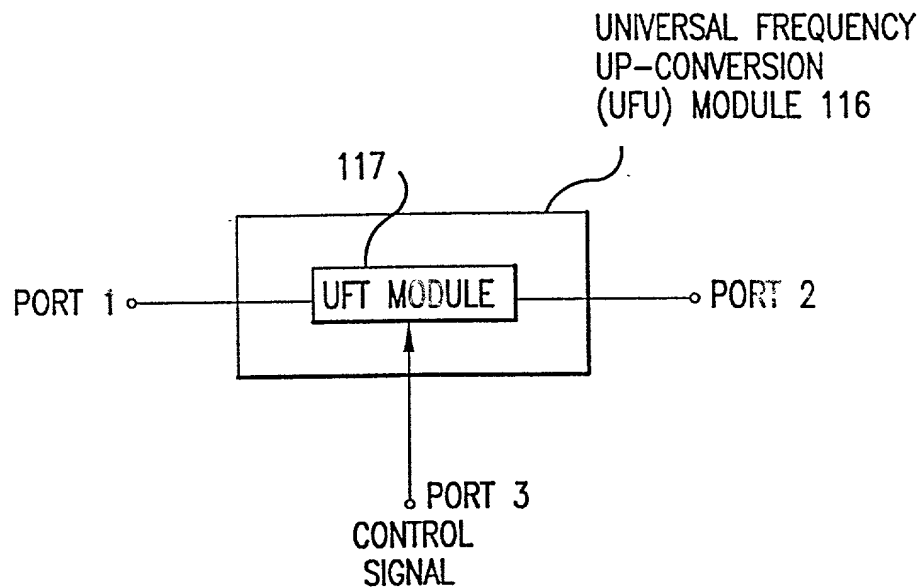


FIG. 1D

097065.083001
T00E80" 54904260

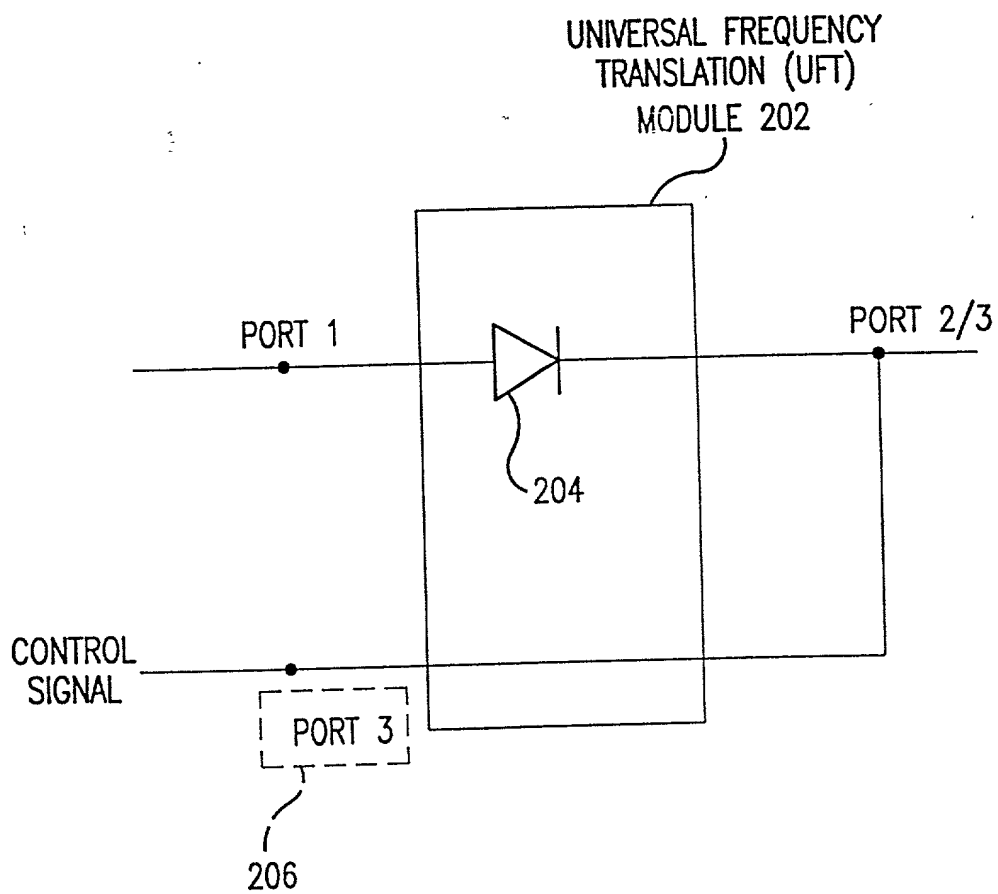


FIG. 2

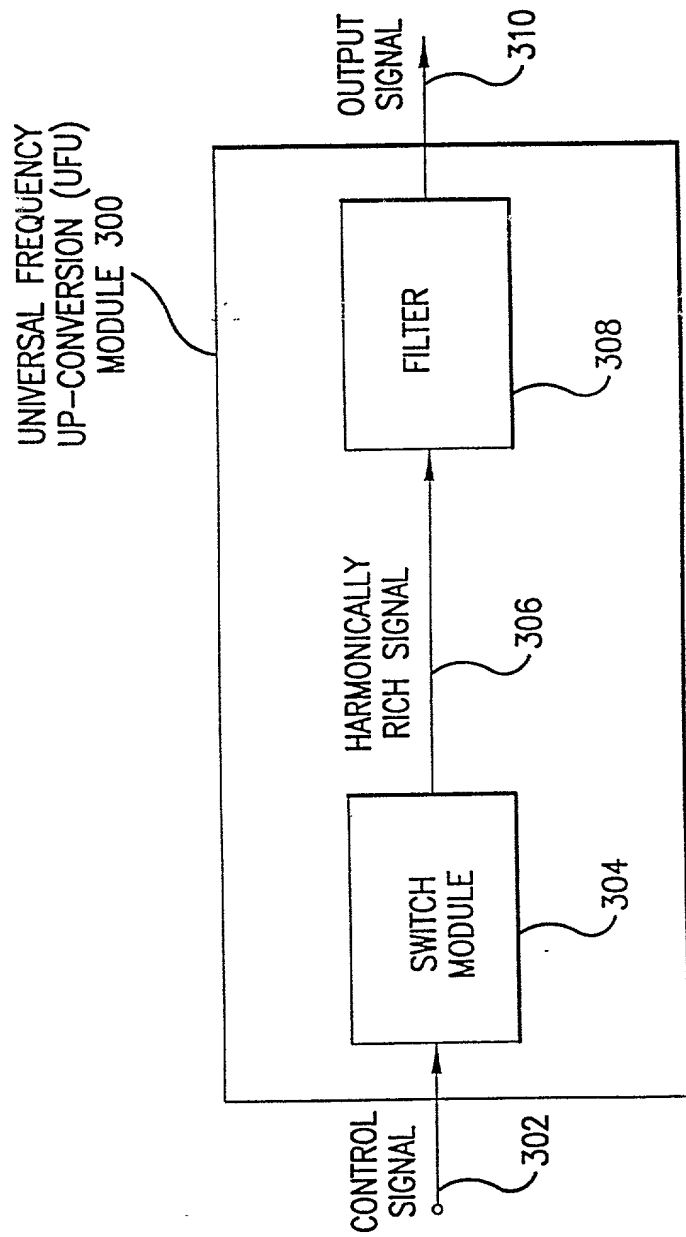


FIG. 3

UNIVERSAL FREQUENCY
UP-CONVERSION (UFU)
MODULE 401

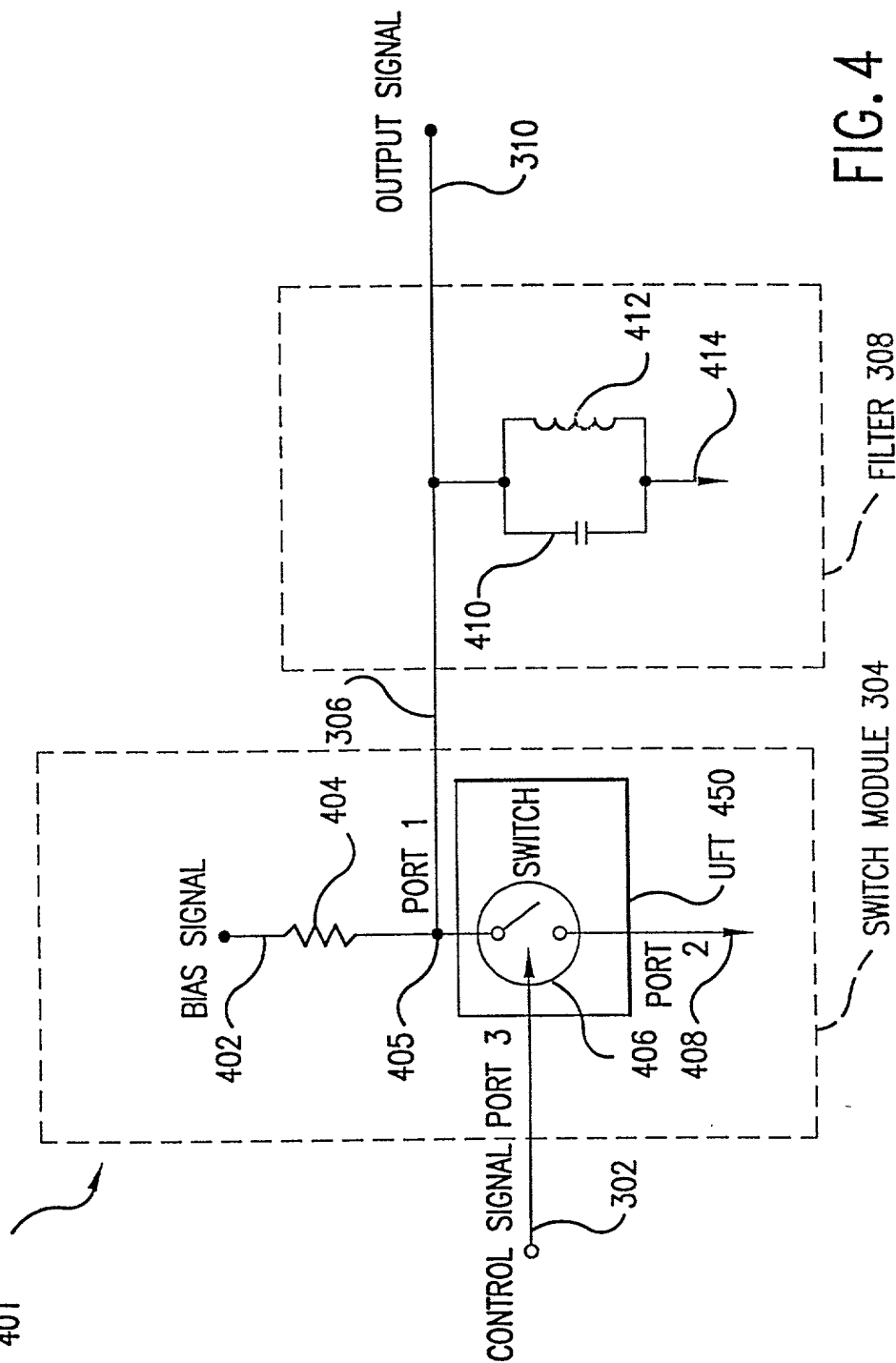


FIG. 4

UNIVERSAL FREQUENCY
UP-CONVERSION
(UFU) MODULE 590

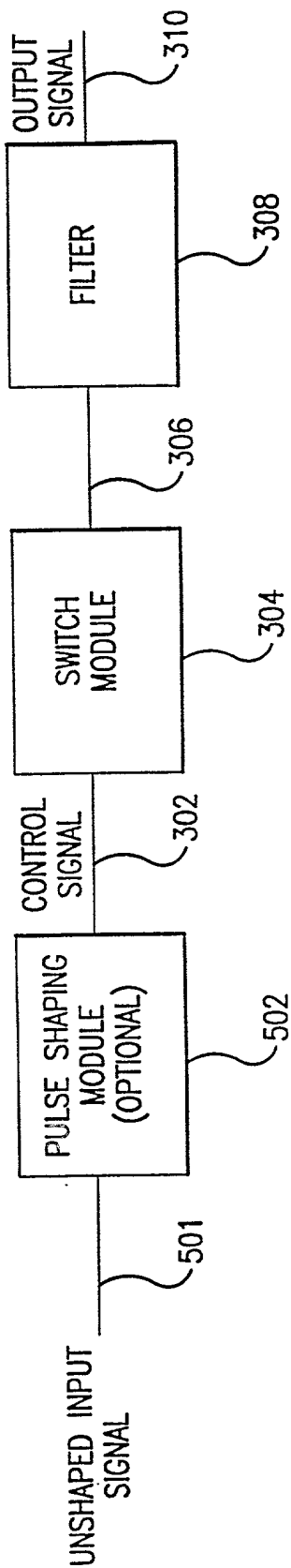


FIG. 5

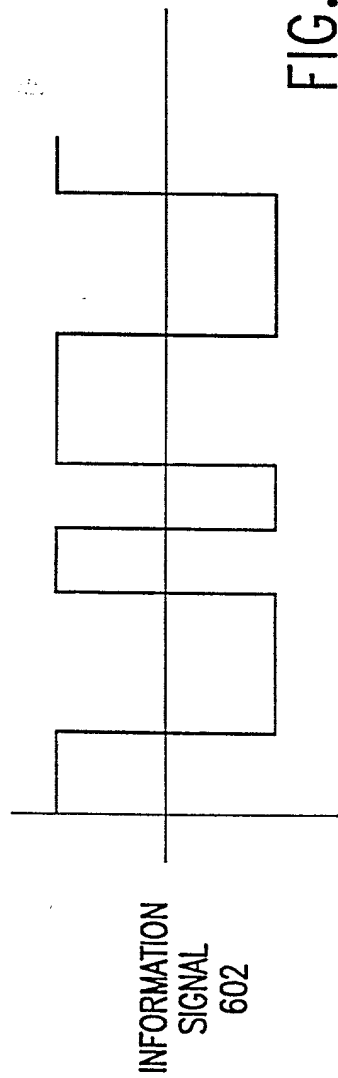


FIG. 6A

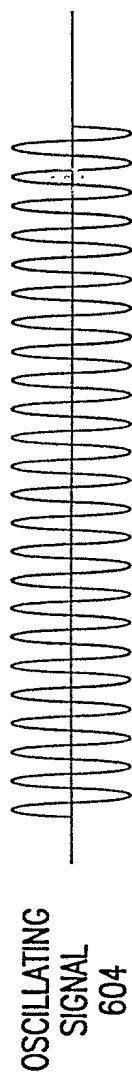


FIG. 6B

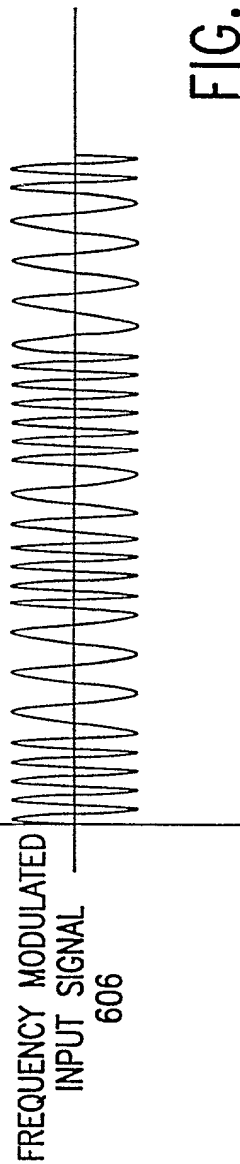


FIG. 6C

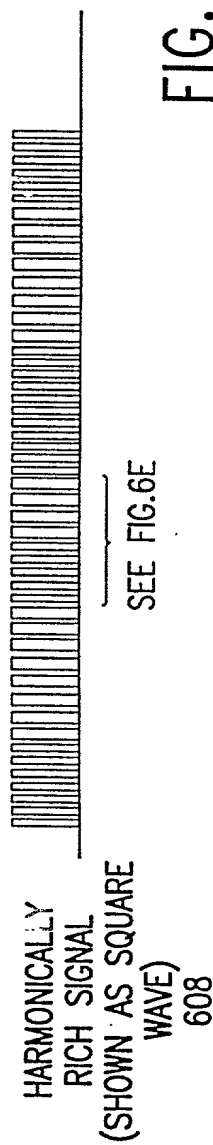
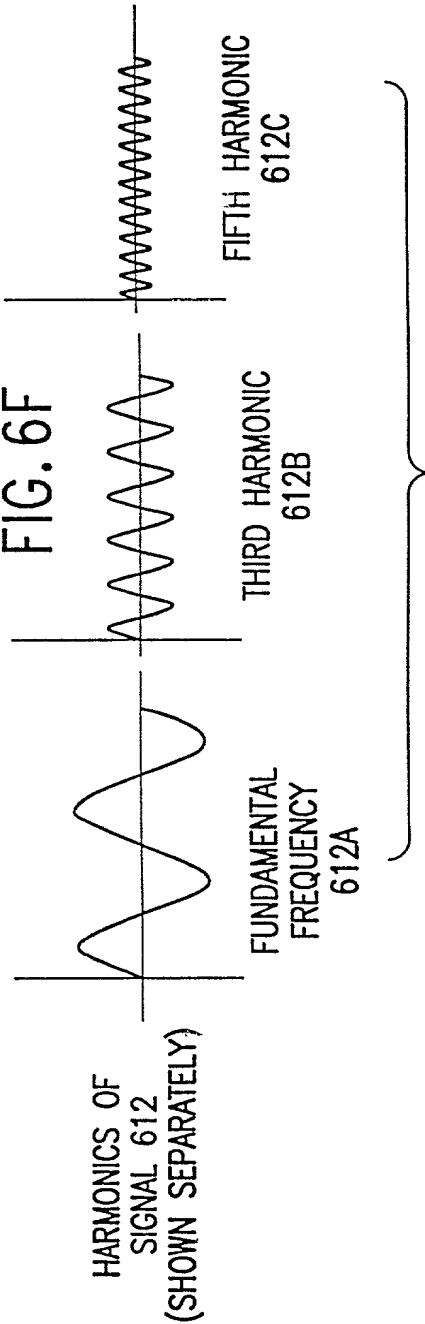
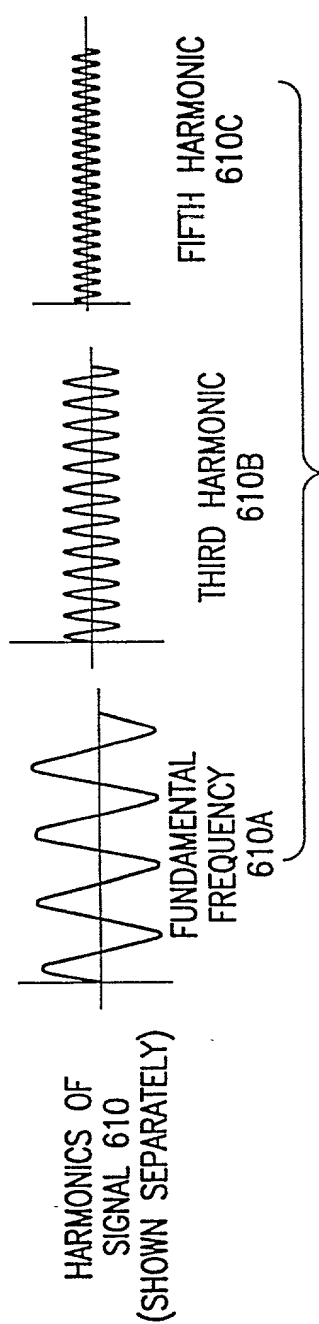
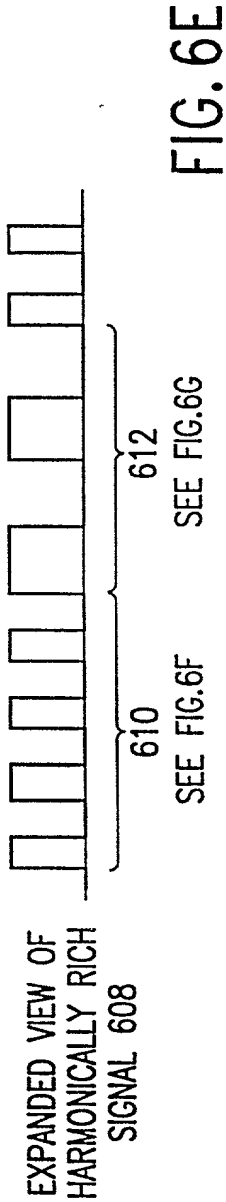


FIG. 6D



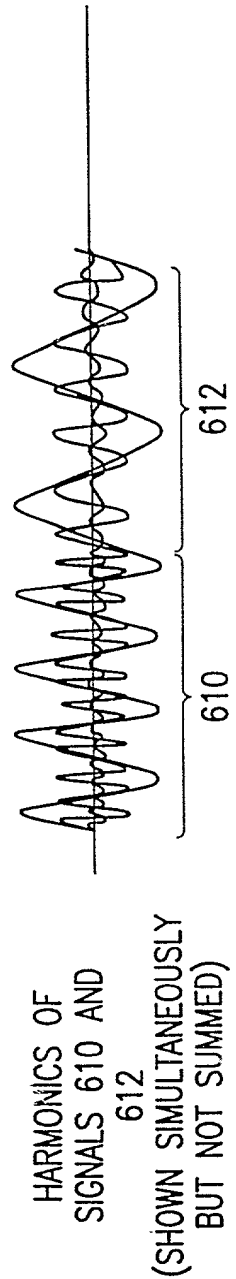


FIG. 6H

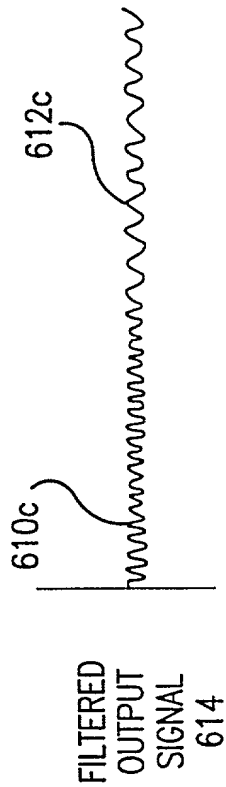


FIG. 6I

0970635.08301
T00E80" 52902260

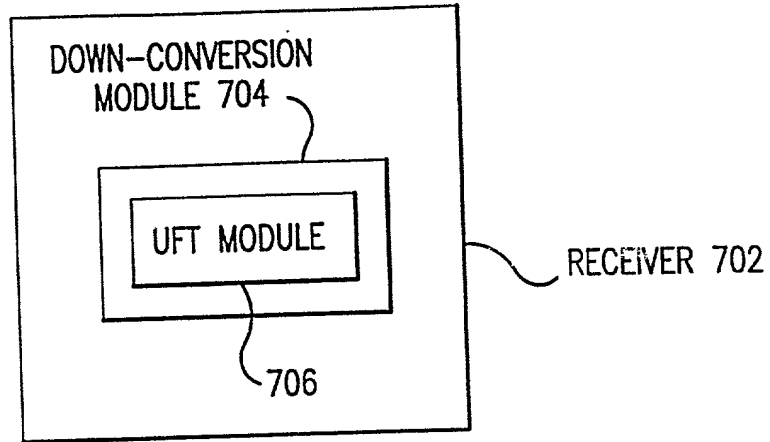


FIG. 7

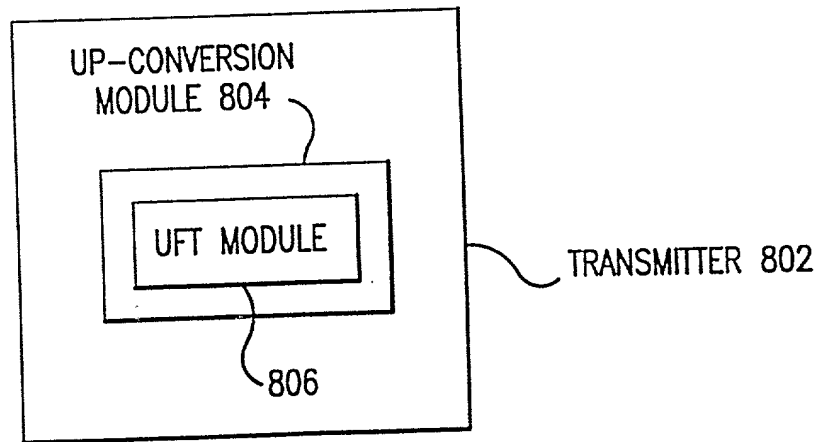


FIG. 8

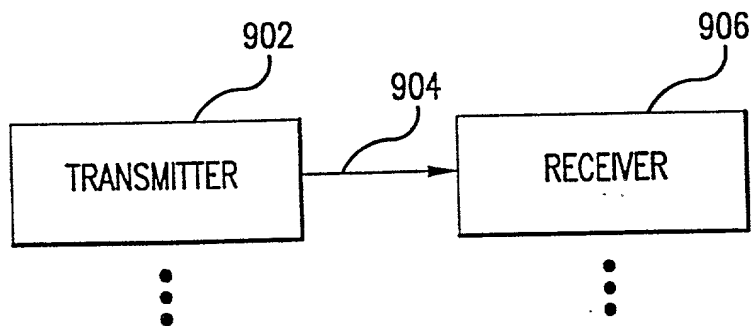


FIG. 9

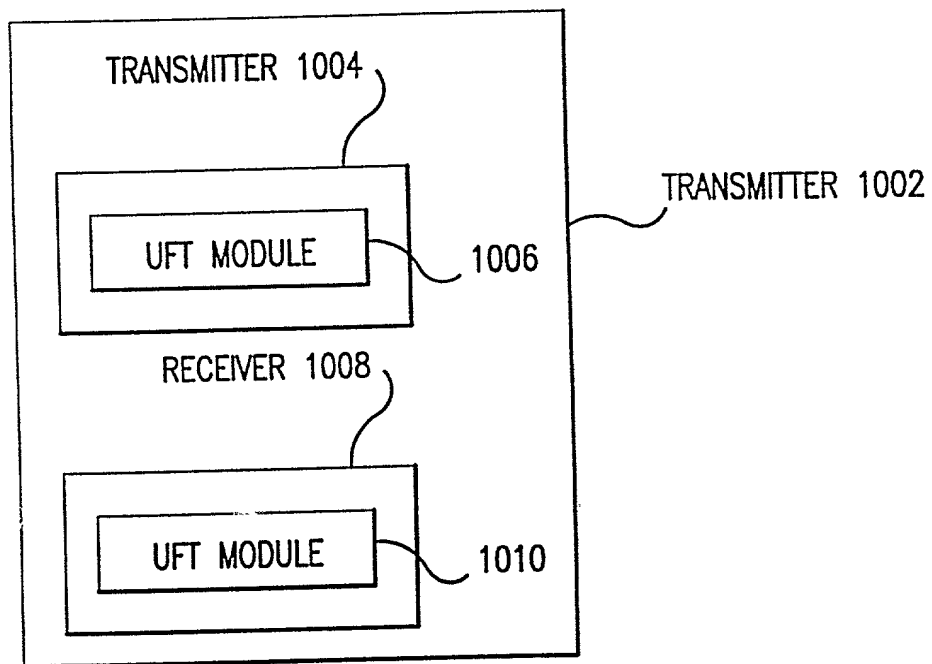


FIG. 10

TRANSCIVER 1102

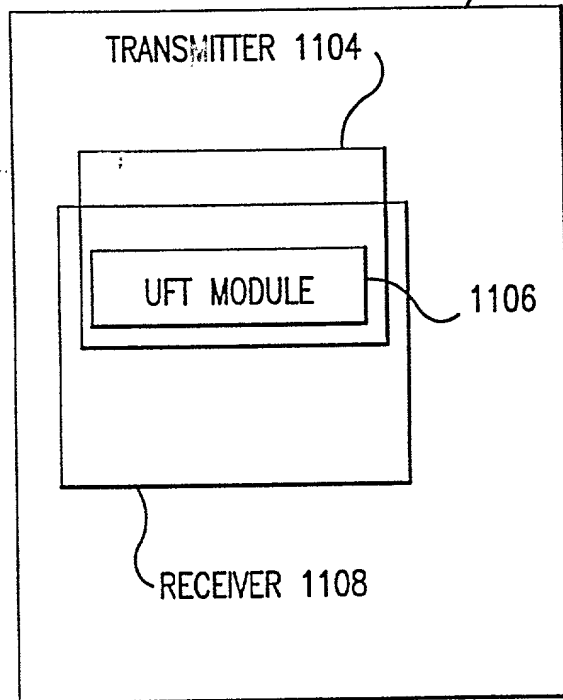


FIG. 11

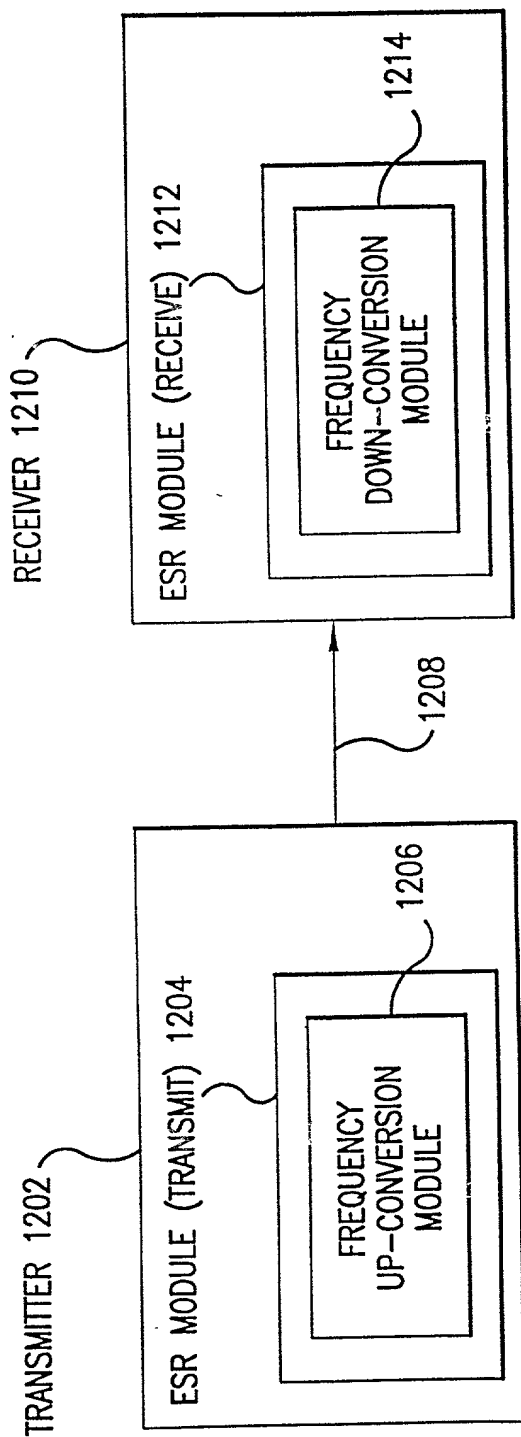


FIG. 12

UNIFIED DOWN-CONVERTING
AND FILTERING (UDF) MODULE 1302

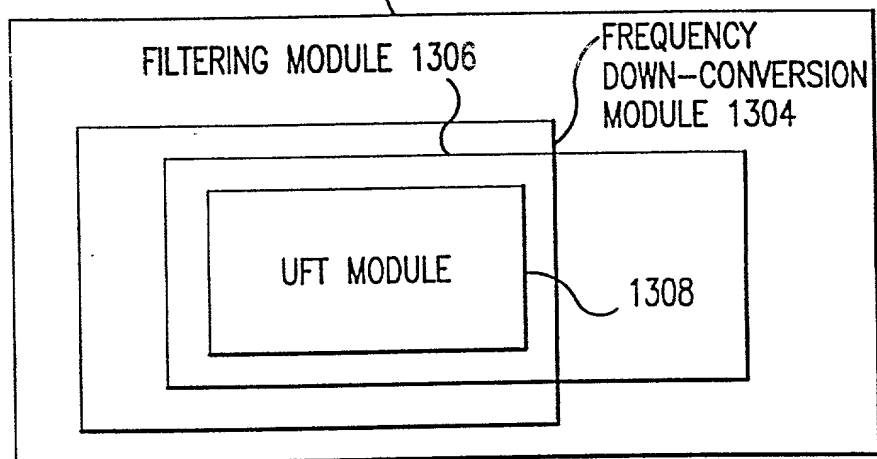


FIG. 13

RECEIVER 1402

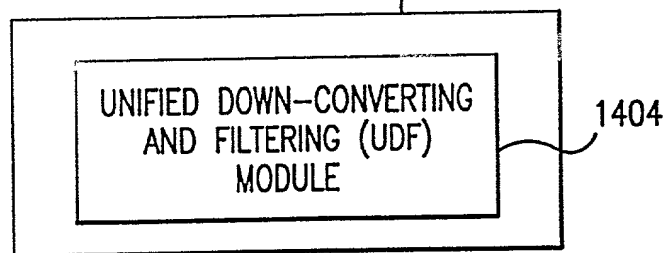


FIG. 14

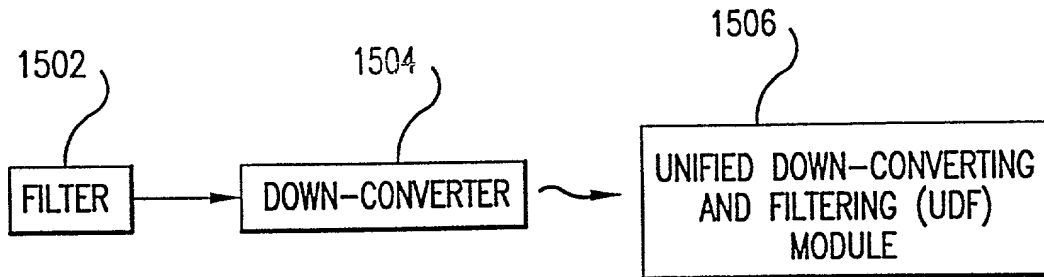


FIG. 15A

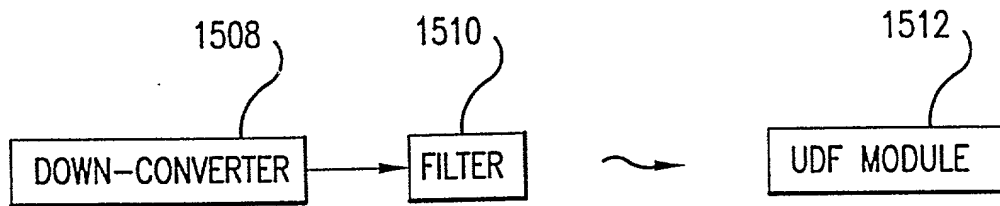


FIG. 15B

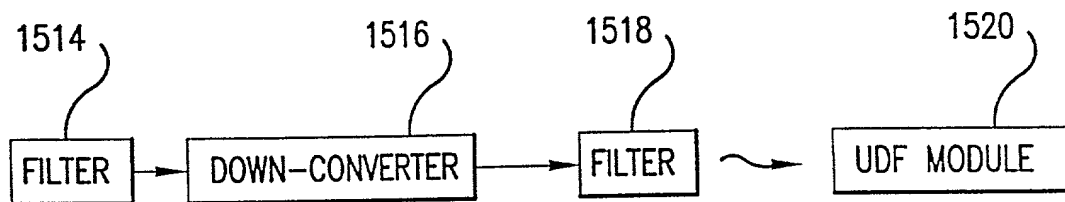


FIG. 15C

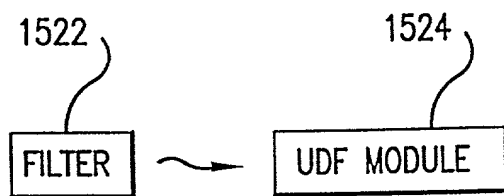


FIG. 15D

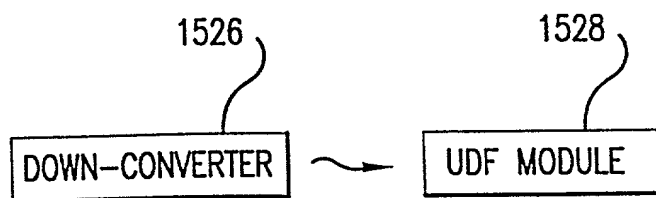


FIG. 15E

0370675-0300
"52502260"

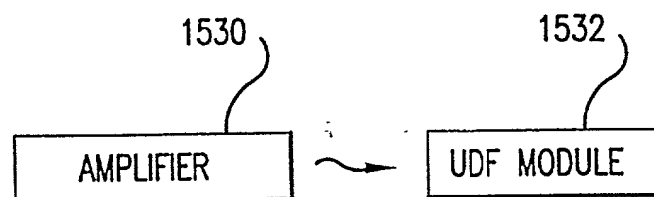


FIG. 15F

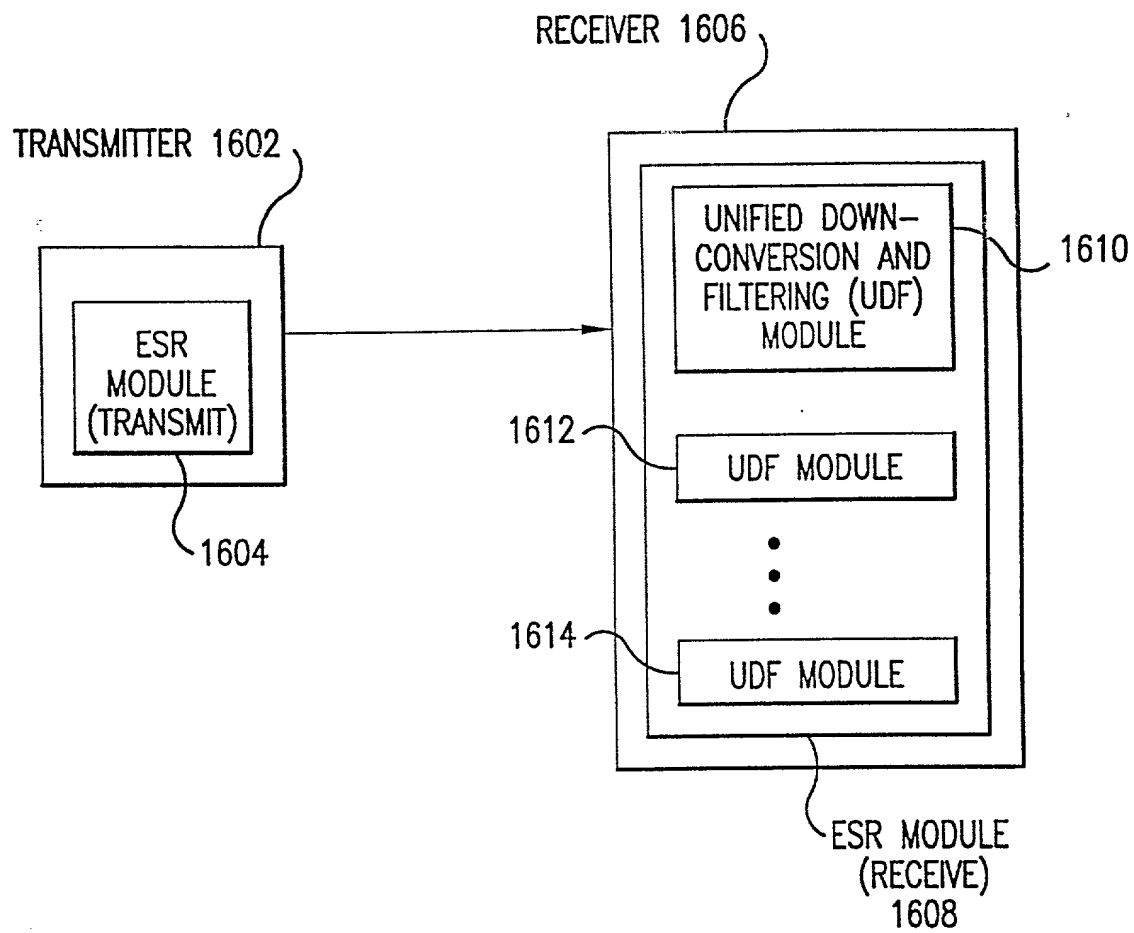


FIG. 16

UNIFIED DOWNCONVERTING AND
FILTERING (UDF) MODULE 1702

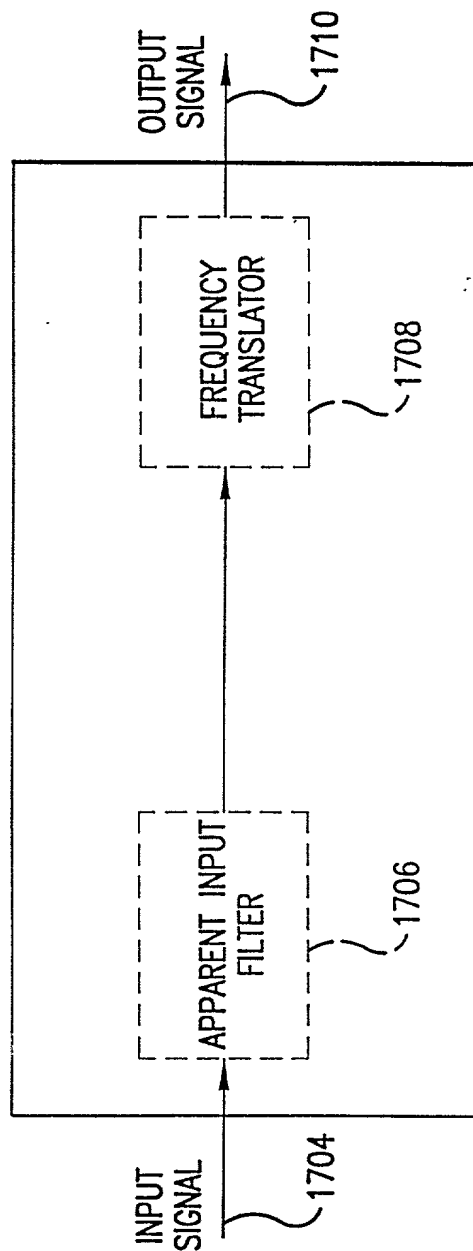


FIG. 17

1802

TIME NODE	t-1 (RISING EDGE OF ϕ_1)	t-1 (RISING EDGE OF ϕ_2)	t (RISING EDGE OF ϕ_1)	t (RISING EDGE OF ϕ_2)	t+1 (RISING EDGE OF ϕ_1)
1902	$V_{I,t-1}$ <u>1804</u>	$V_{I,t-1}$ <u>1808</u>	$V_{I,t}$ <u>1816</u>	$V_{I,t}$ <u>1826</u>	$V_{I,t+1}$ <u>1838</u>
1904	—	$V_{I,t-1}$ <u>1810</u>	$V_{I,t-1}$ <u>1818</u>	$V_{I,t}$ <u>1828</u>	$V_{I,t}$ <u>1840</u>
1906	$V_{O,t-1}$ <u>1806</u>	$V_{O,t-1}$ <u>1812</u>	$V_{O,t}$ <u>1820</u>	$V_{O,t}$ <u>1830</u>	$V_{O,t+1}$ <u>1842</u>
1908	—	$V_{O,t-1}$ <u>1814</u>	$V_{O,t-1}$ <u>1822</u>	$V_{O,t}$ <u>1832</u>	$V_{O,t}$ <u>1844</u>
1910	— <u>1807</u>	—	$V_{O,t-1}$ <u>1824</u>	$V_{O,t-1}$ <u>1834</u>	$V_{O,t}$ <u>1846</u>
1912	—	— <u>1815</u>	—	$V_{O,t-1}$ <u>1836</u>	$V_{O,t-1}$ <u>1848</u>
1918	—	—	—	—	$V_{I,t} - 1850$ $0.1 * V_{O,t} -$ $0.8 * V_{O,t-1}$

FIG. 18

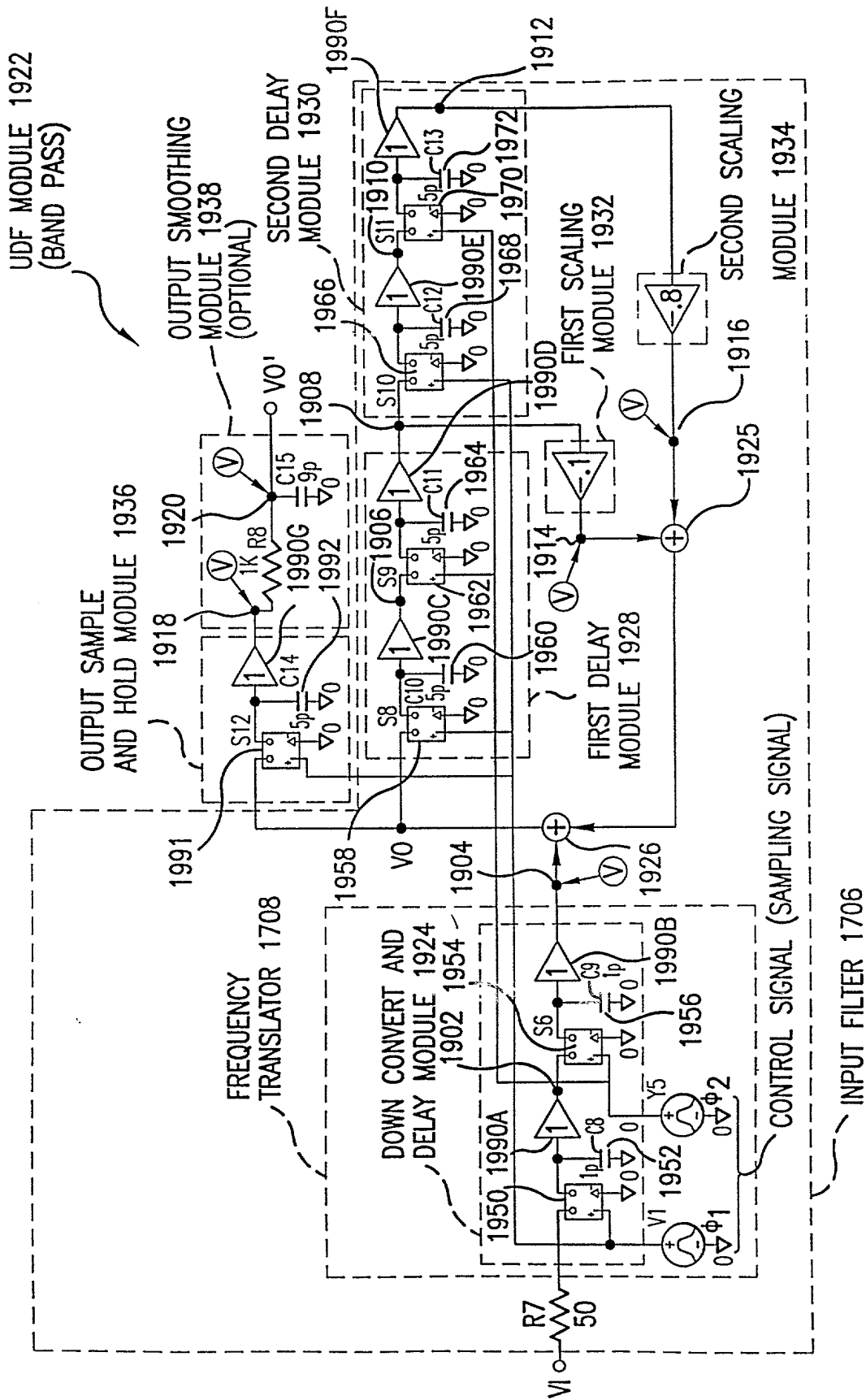


FIG. 19

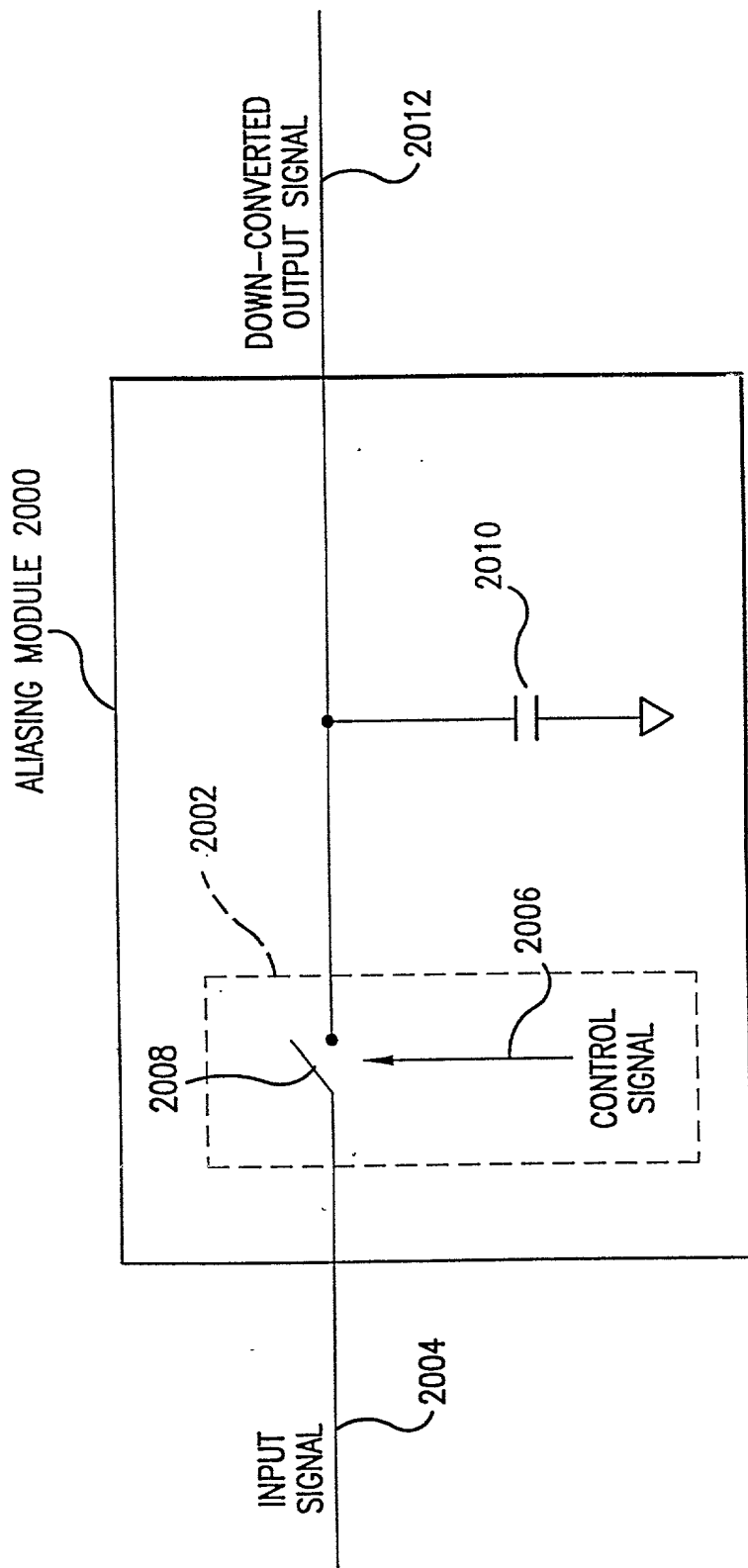


FIG. 20A

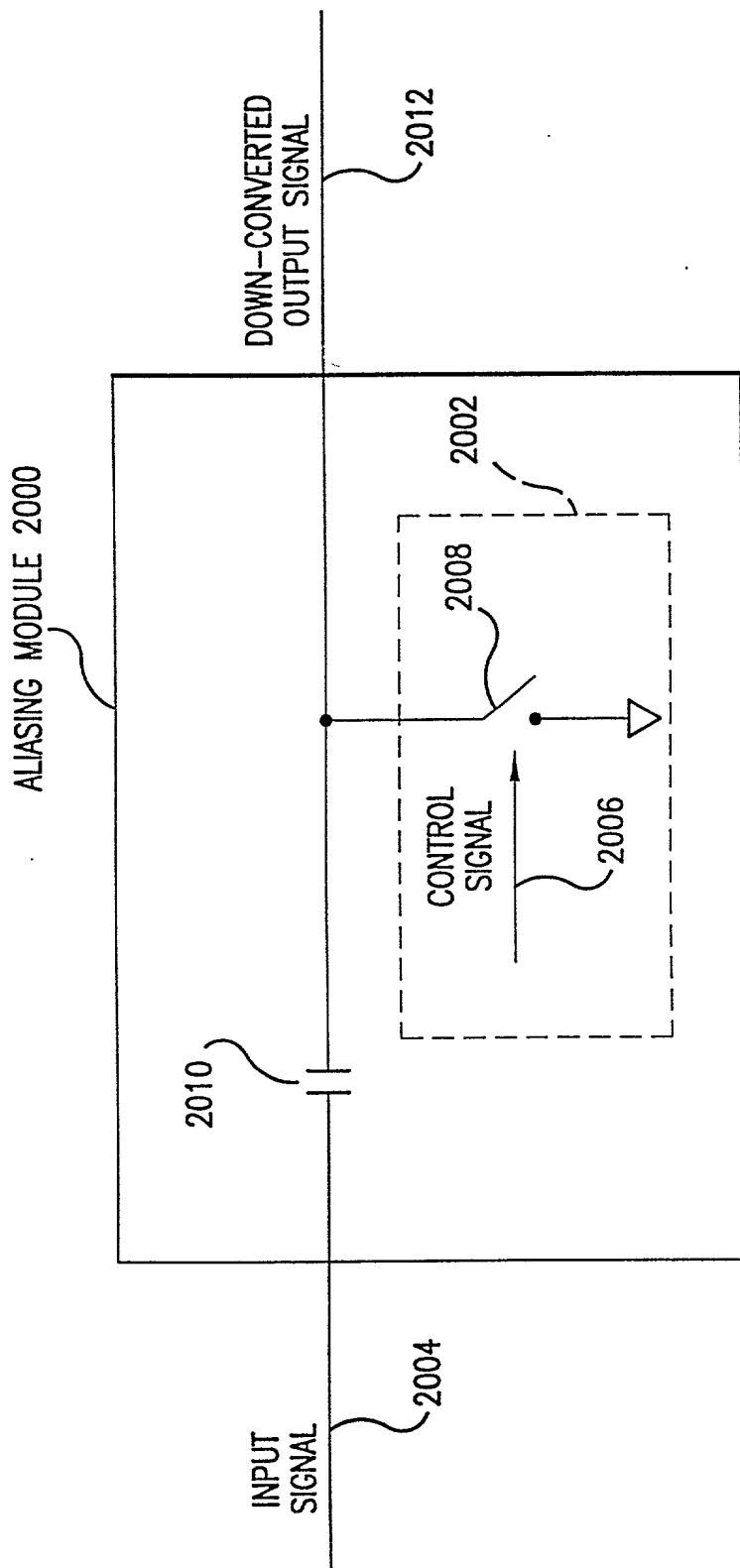


FIG. 20A-1

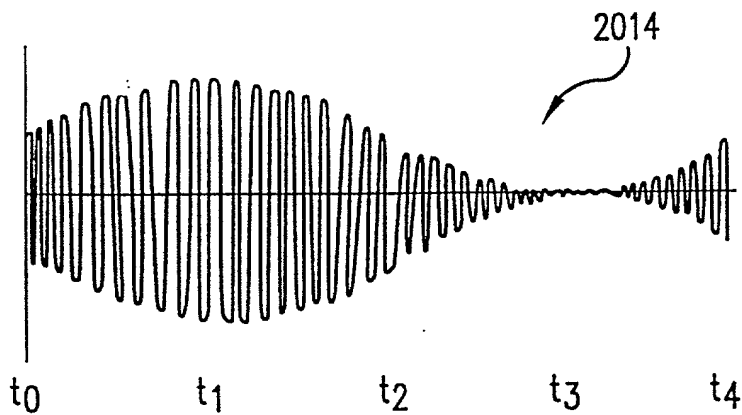


FIG. 20B

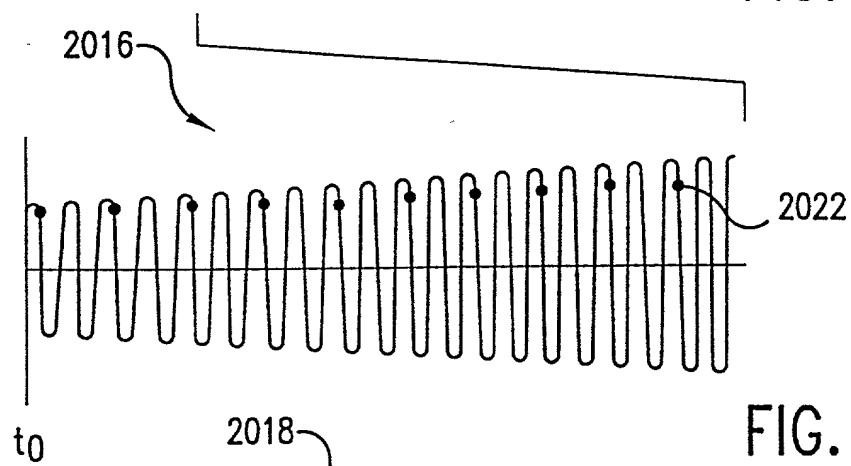


FIG. 20C

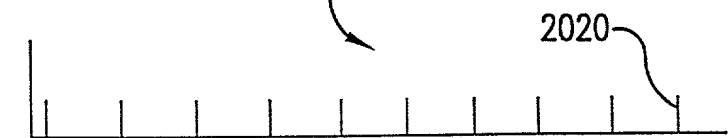


FIG. 20D

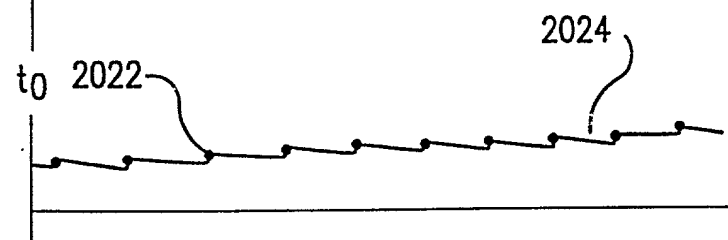


FIG. 20E

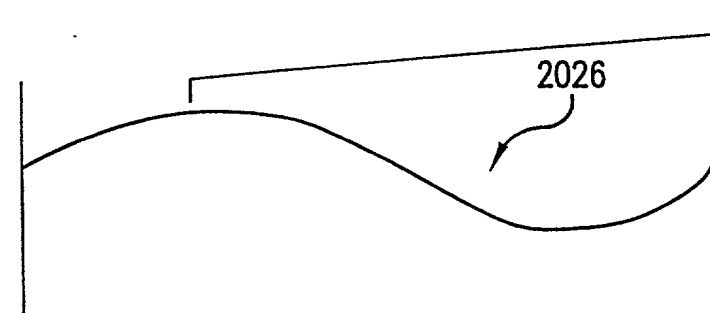


FIG. 20F

0070675.033001
FOE30"5290/260

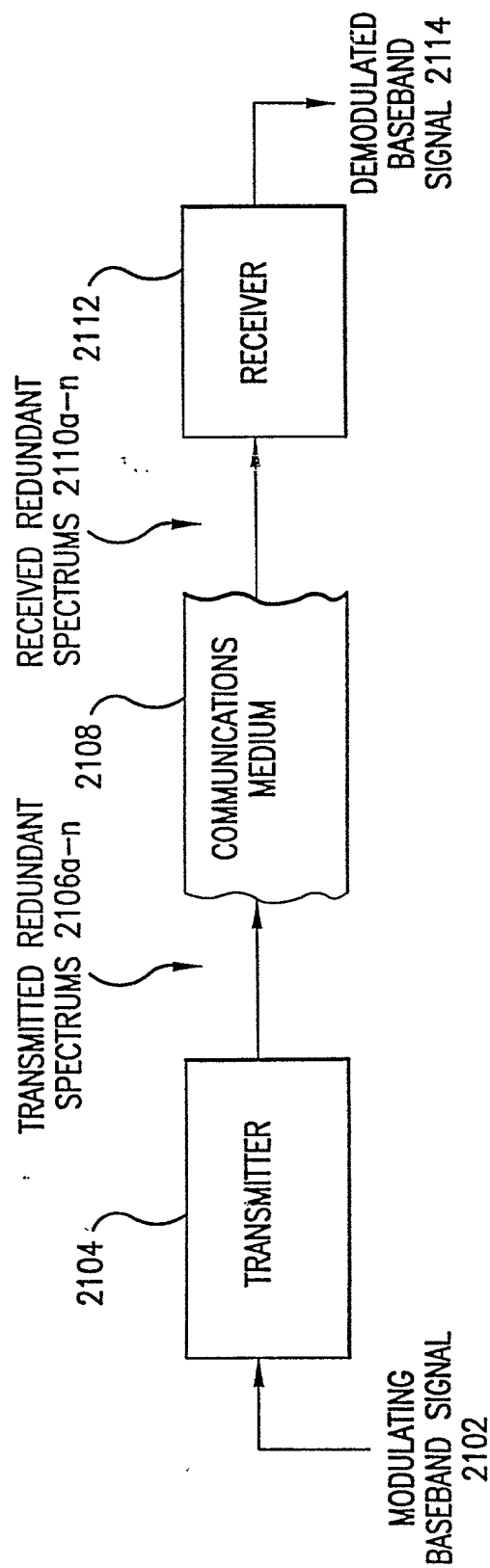


FIG. 21

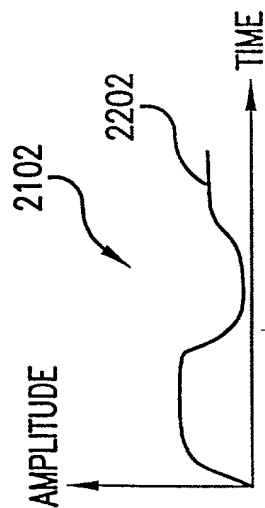


FIG. 22A

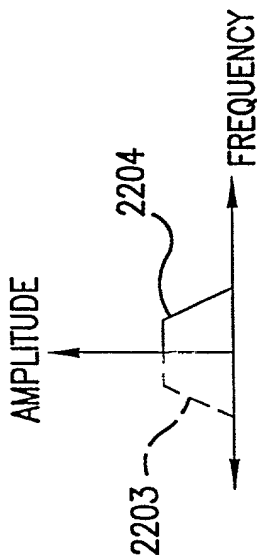


FIG. 22B

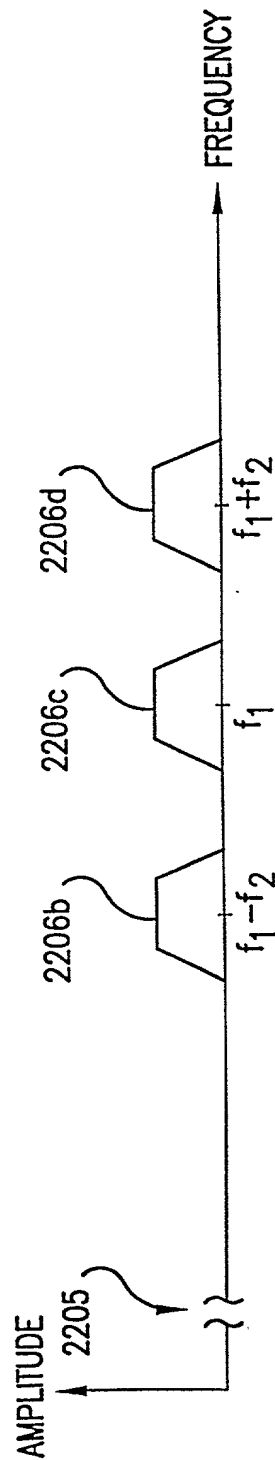


FIG. 22C

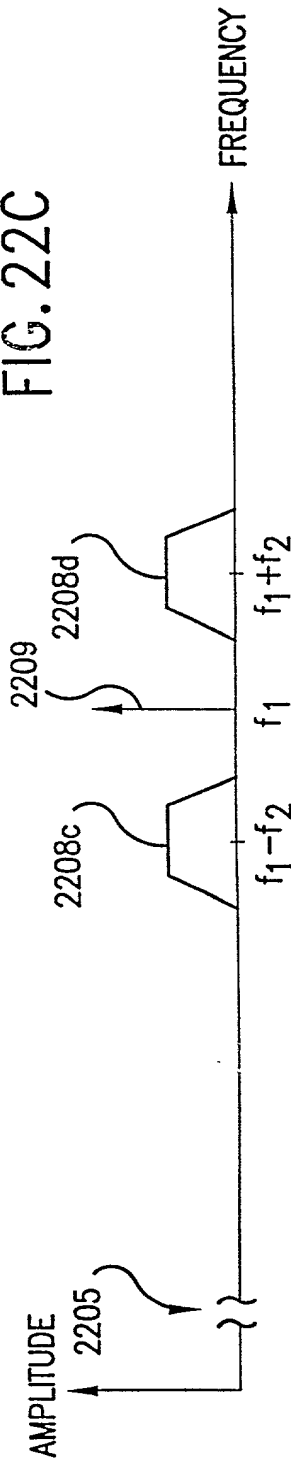


FIG. 22D

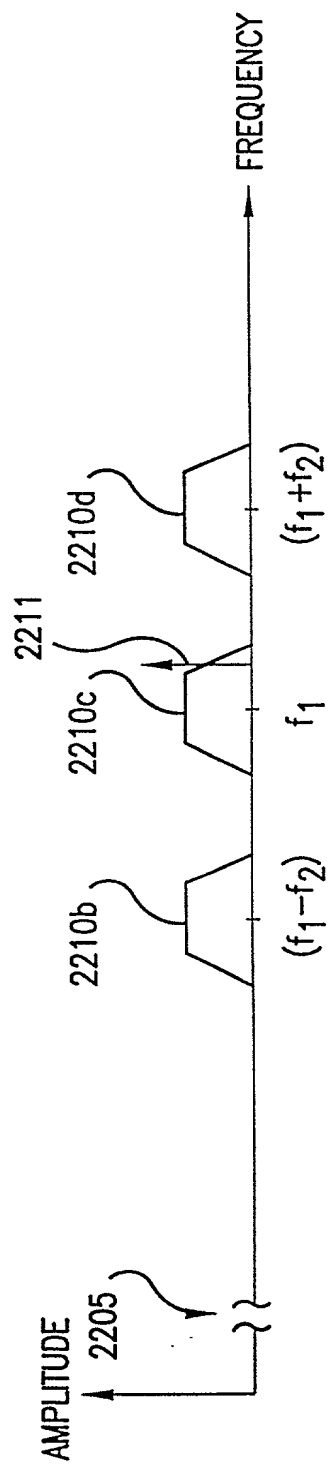


FIG. 22E

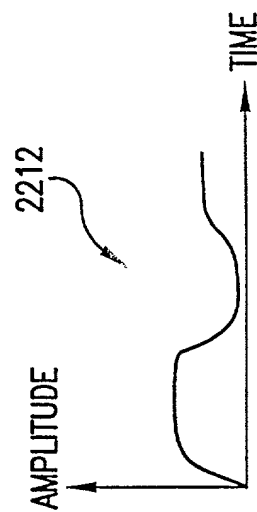


FIG. 22F

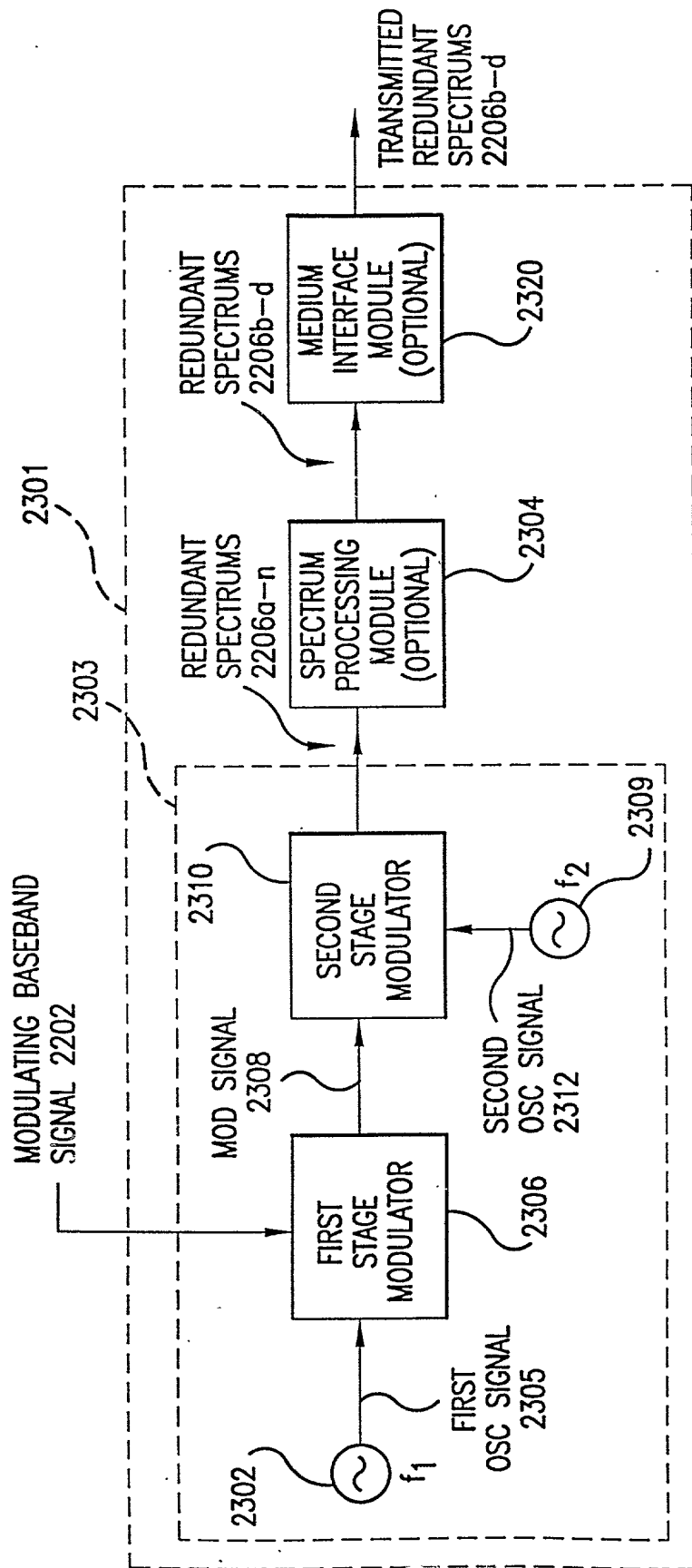


FIG. 23A

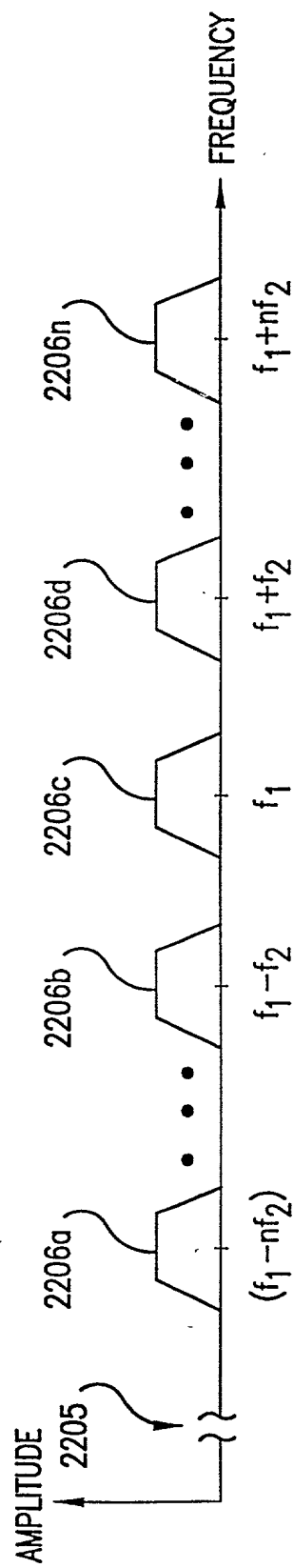


FIG. 23B

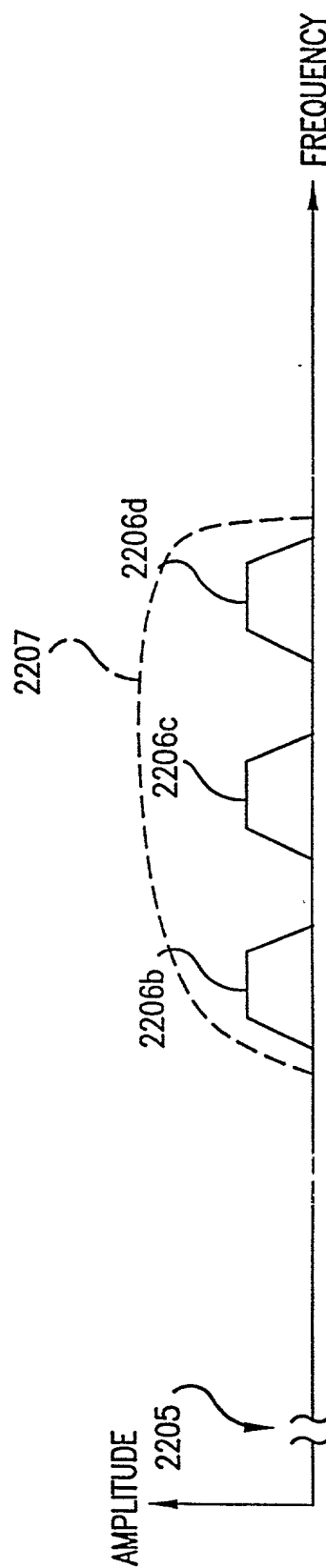


FIG. 23C

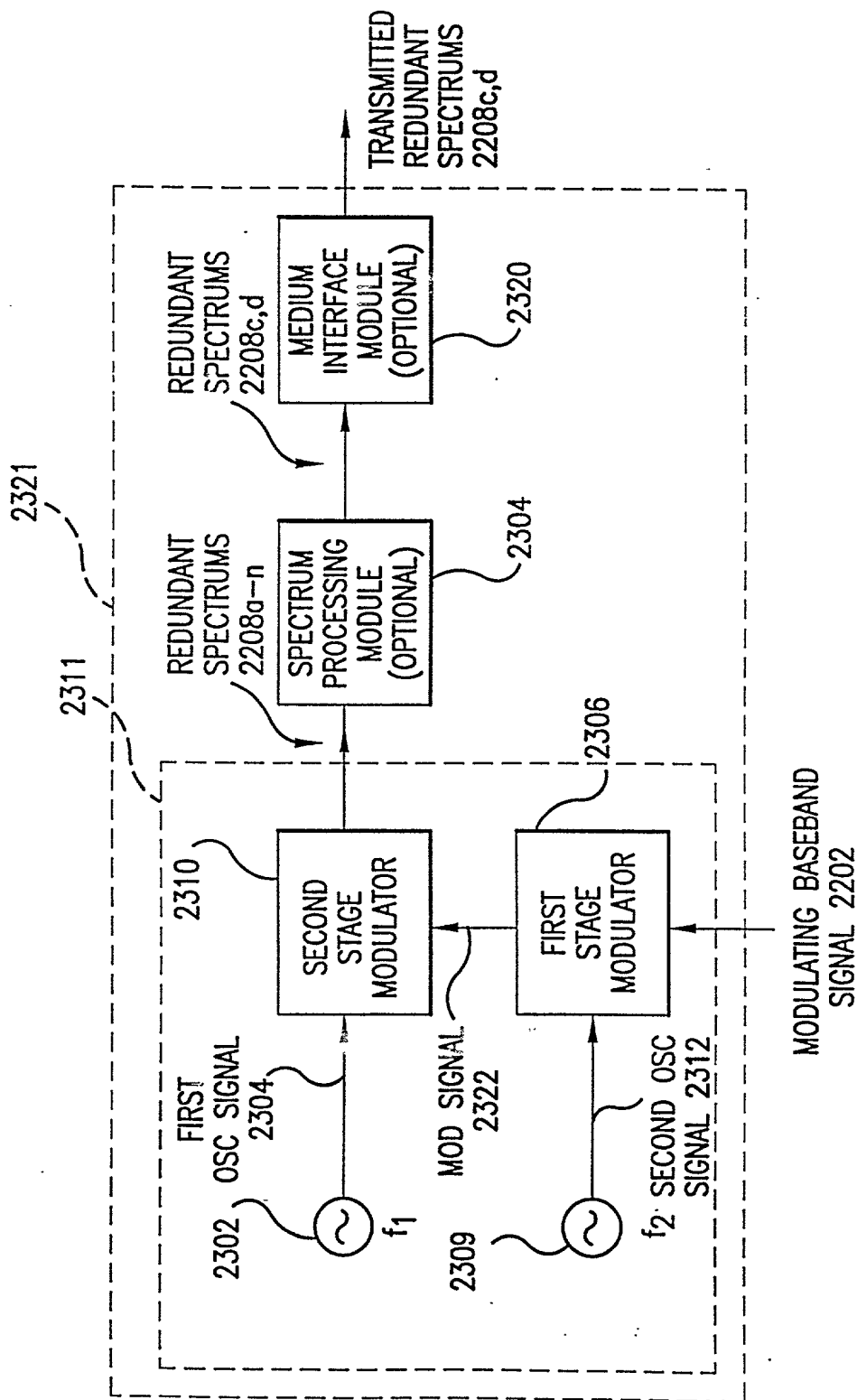


FIG. 23D

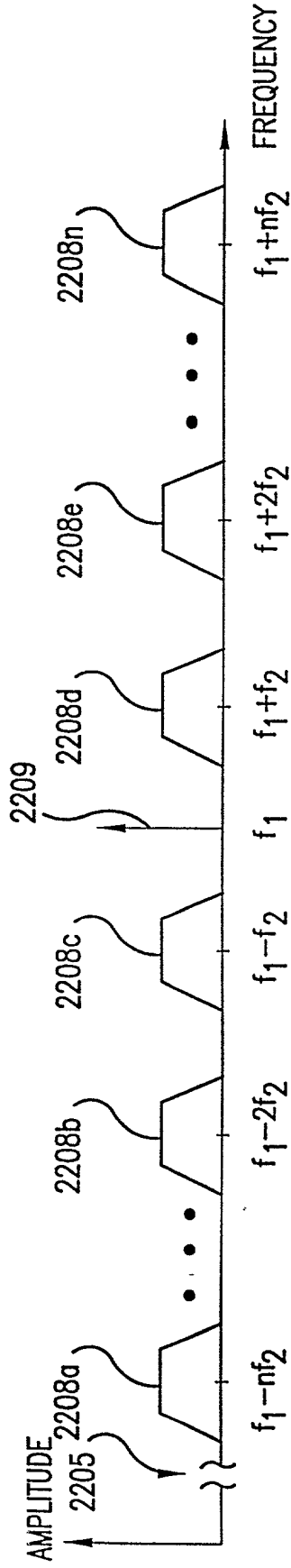


FIG. 23E

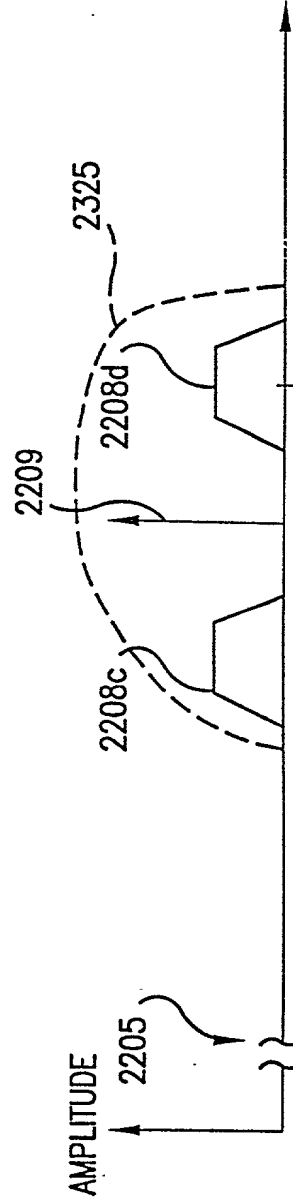
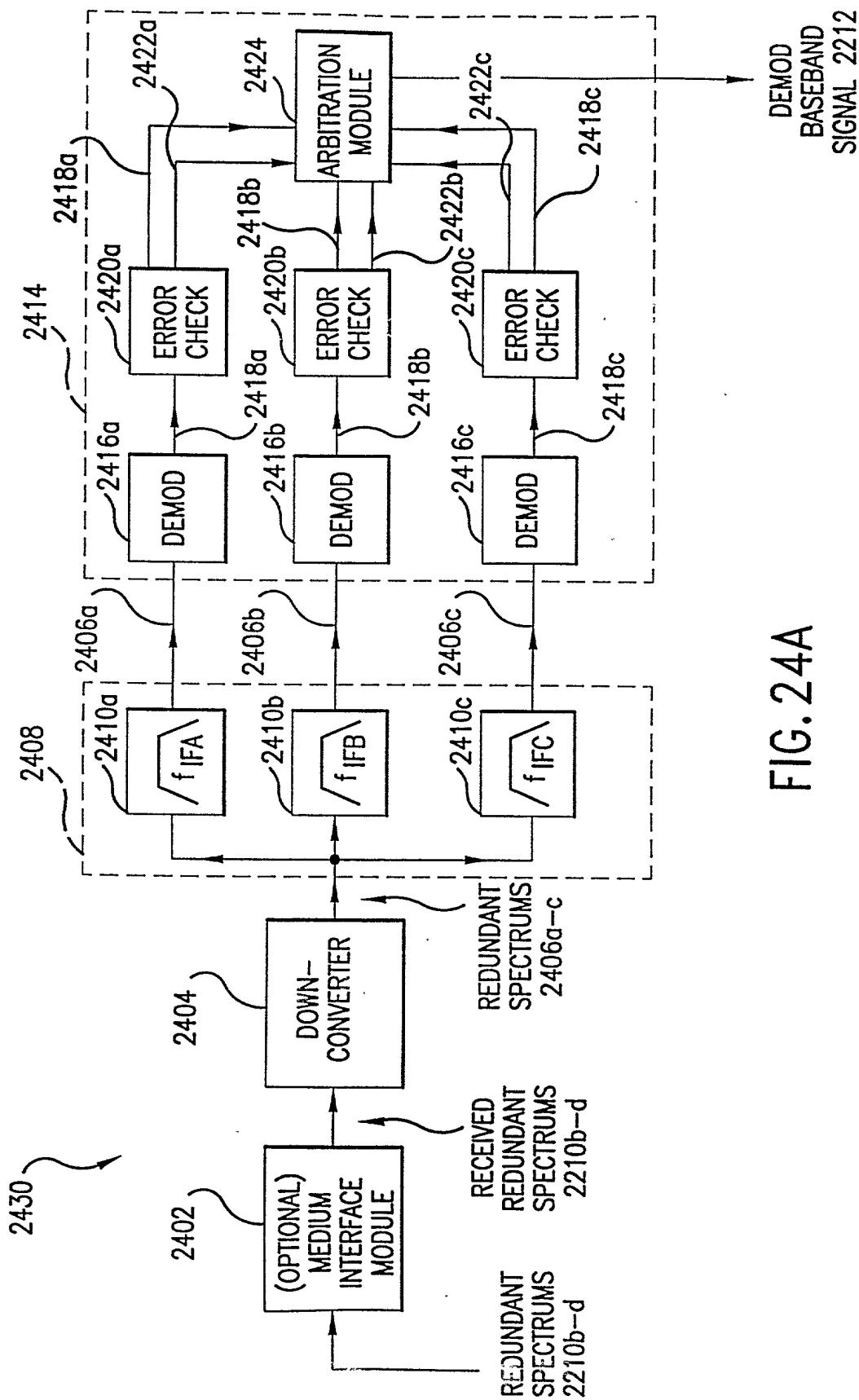


FIG. 23F



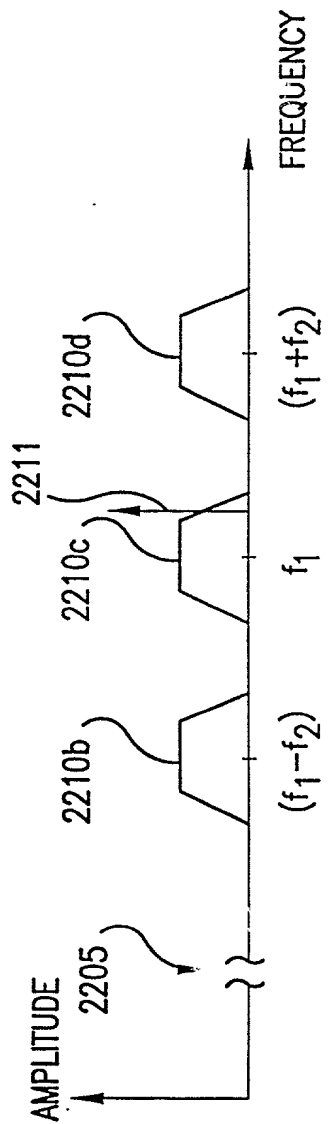


FIG. 24B

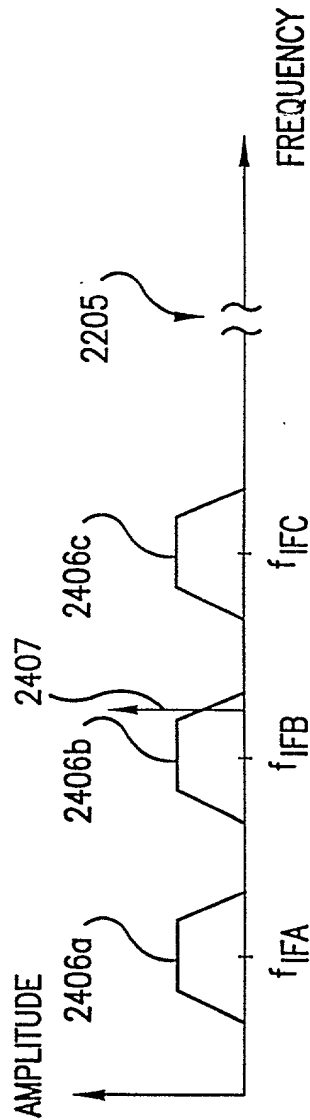


FIG. 24C

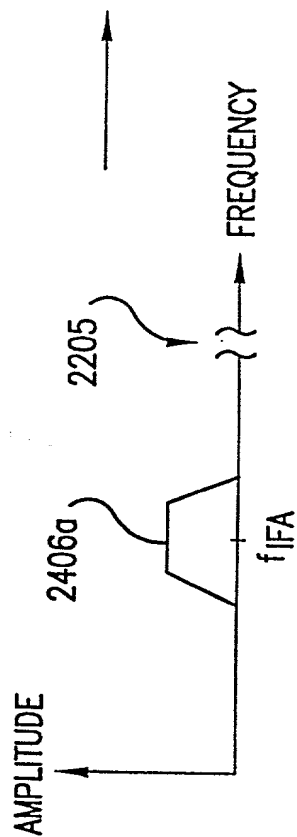


FIG. 24D

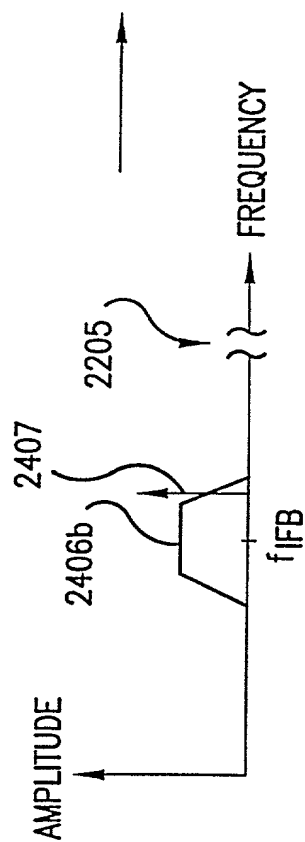


FIG. 24E

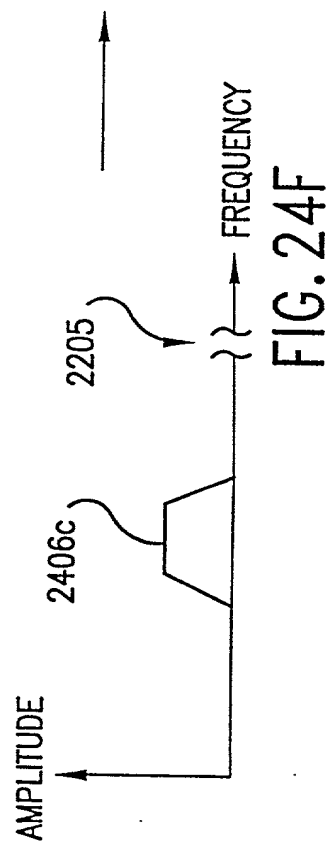


FIG. 24F

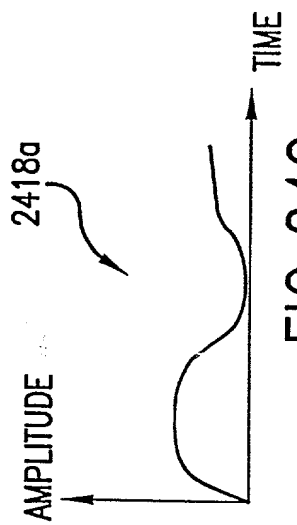


FIG. 24G

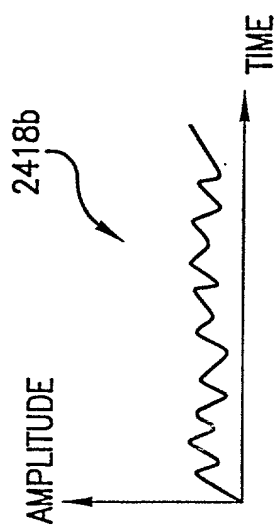


FIG. 24H

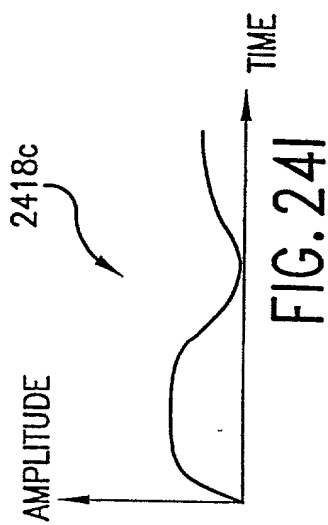


FIG. 24I

FIG. 24J

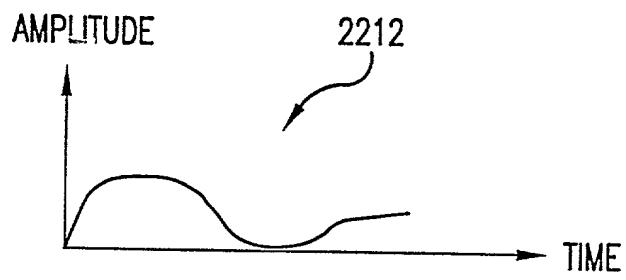


FIG. 24J

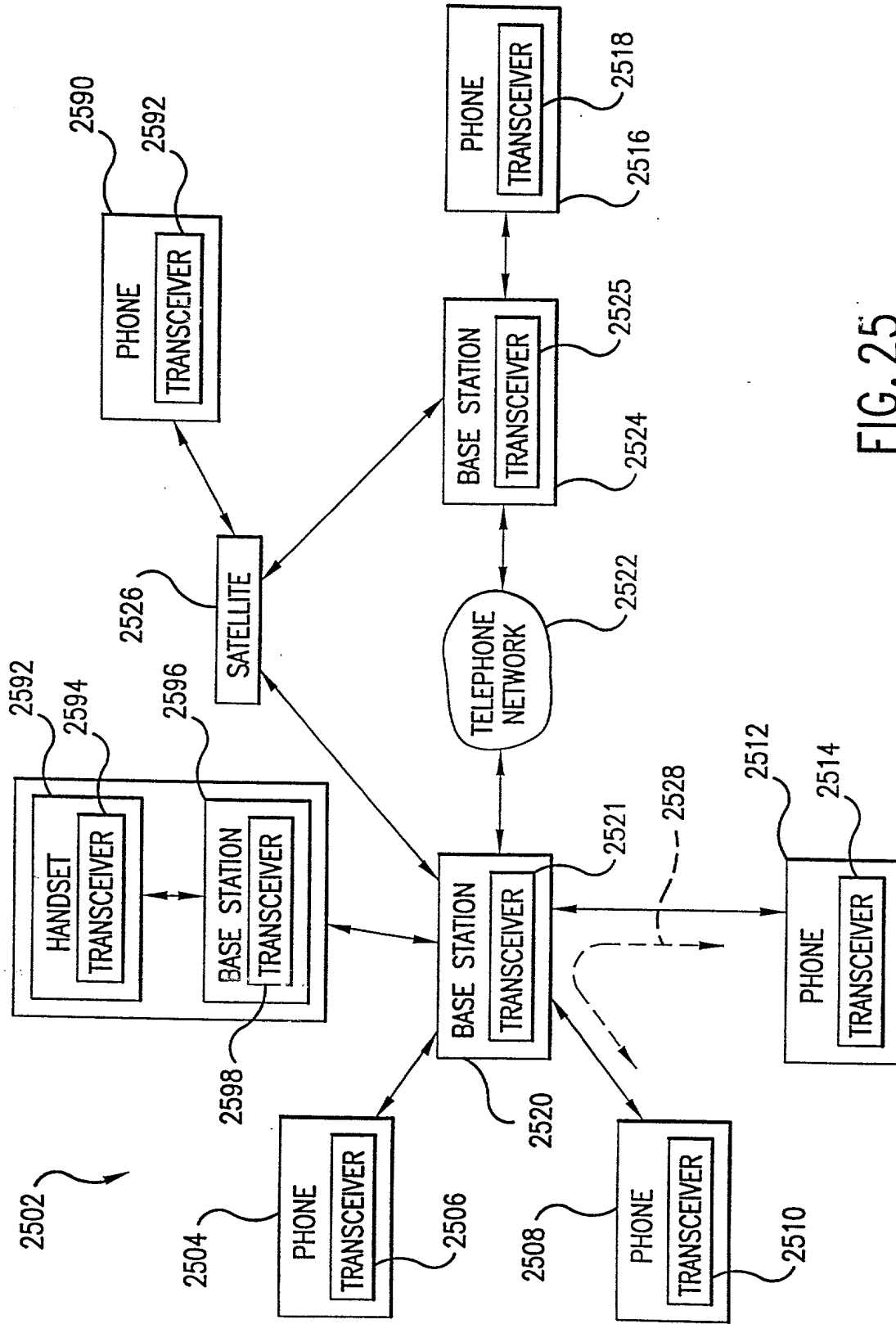


FIG. 25

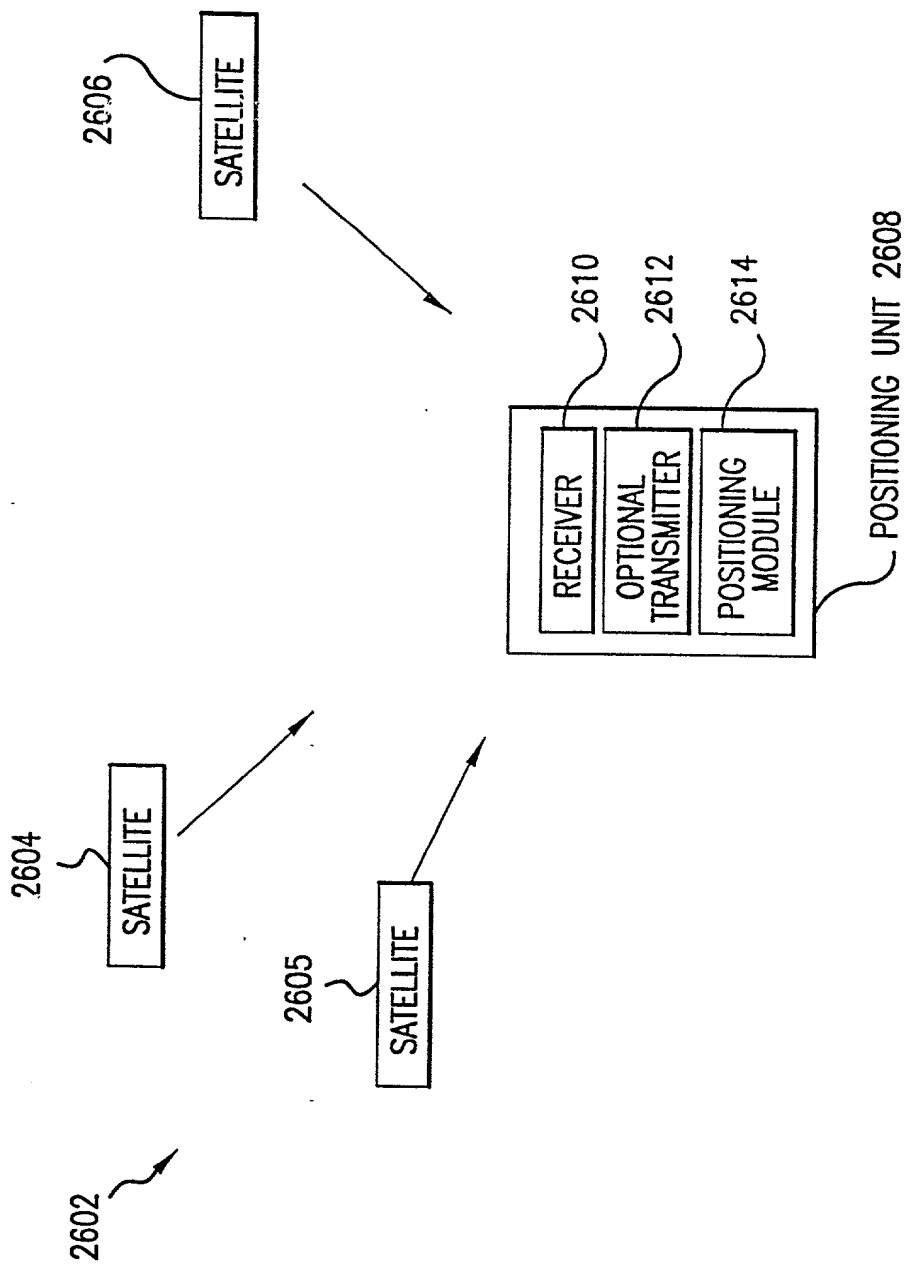


FIG. 26

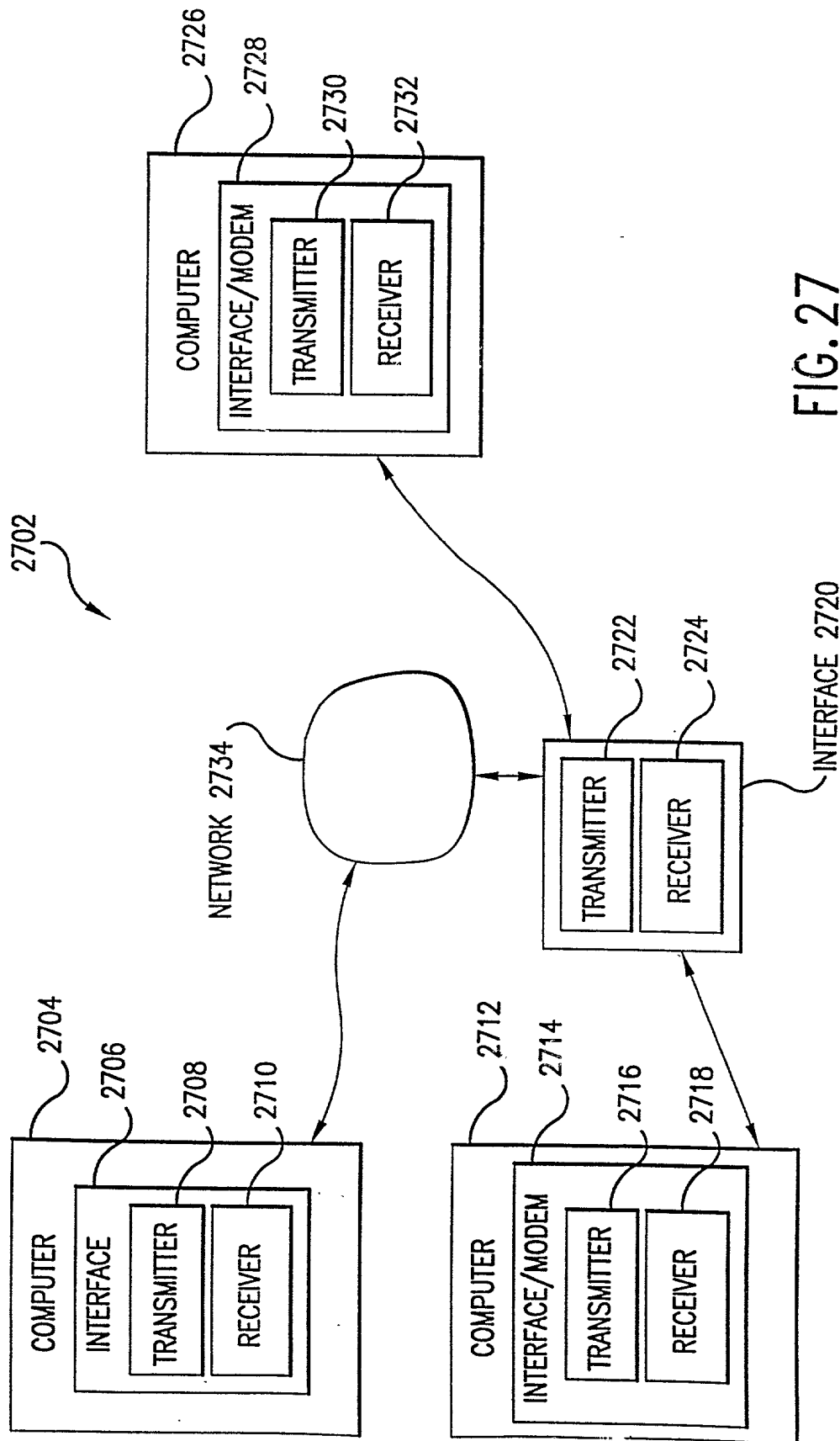


FIG. 27

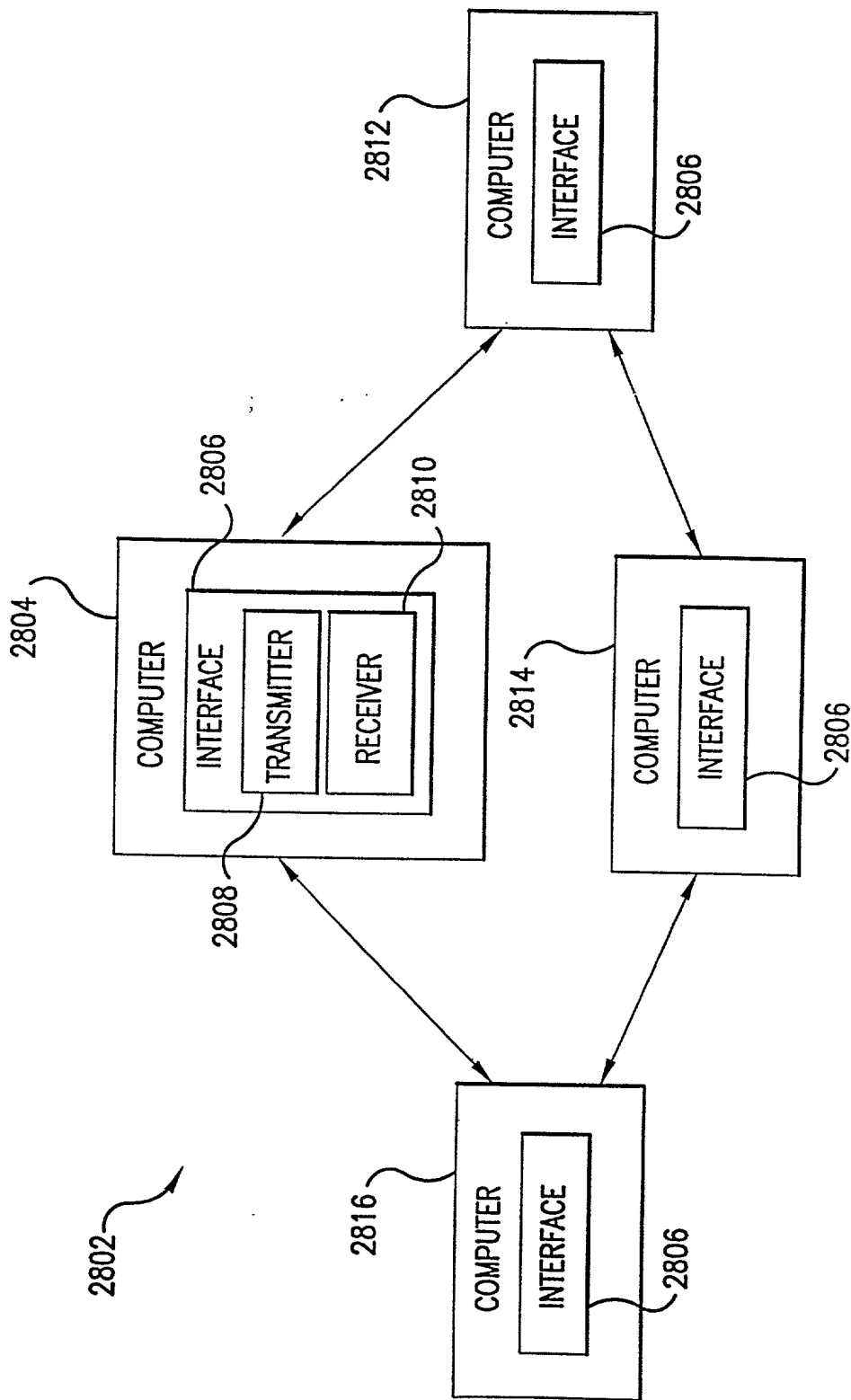


FIG. 28

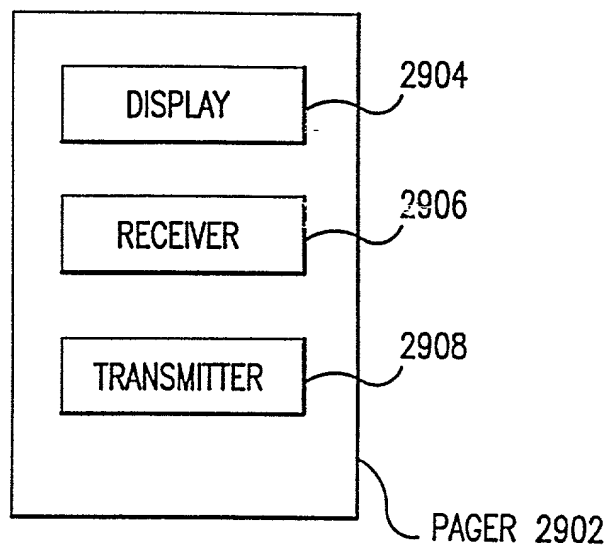


FIG. 29

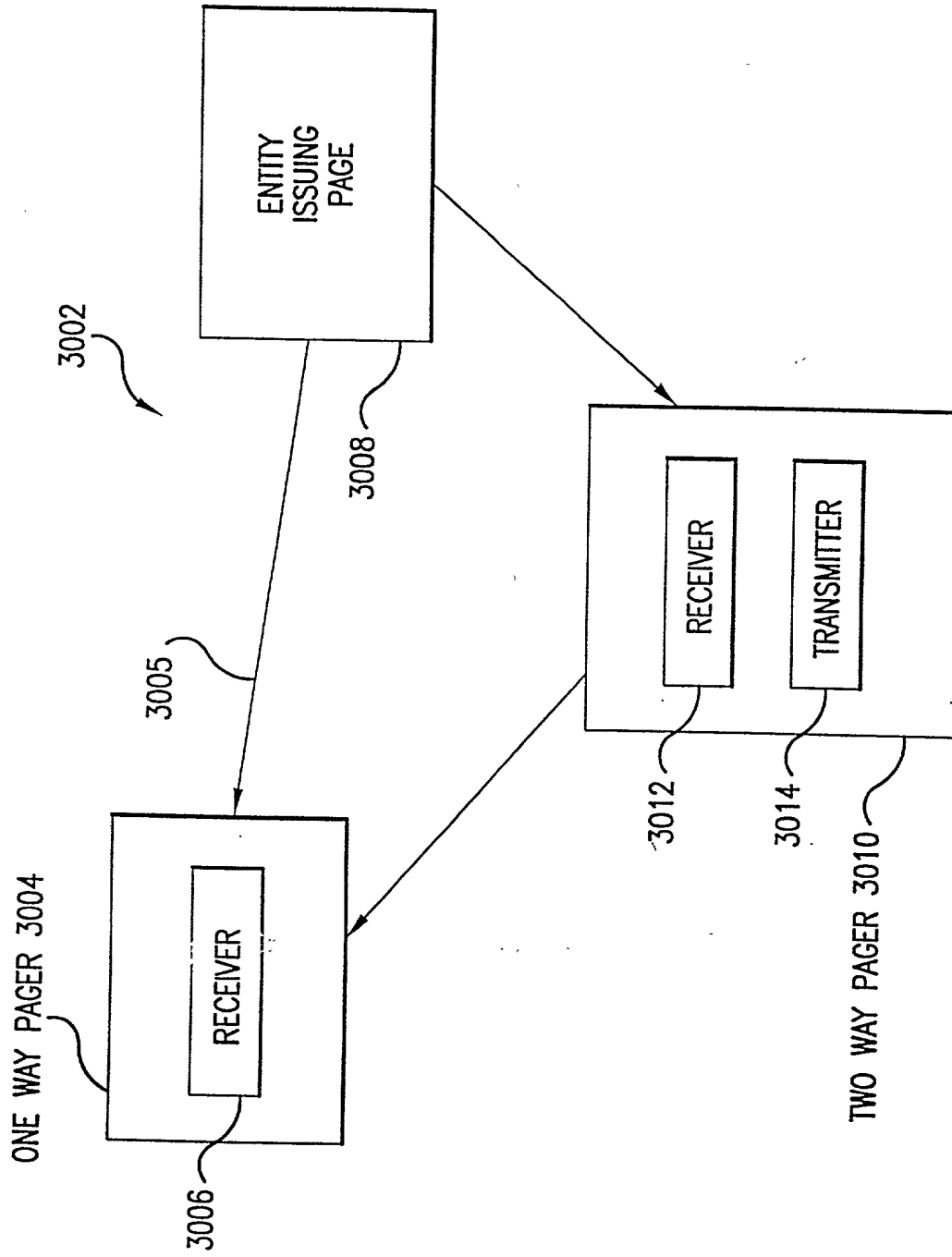


FIG. 30

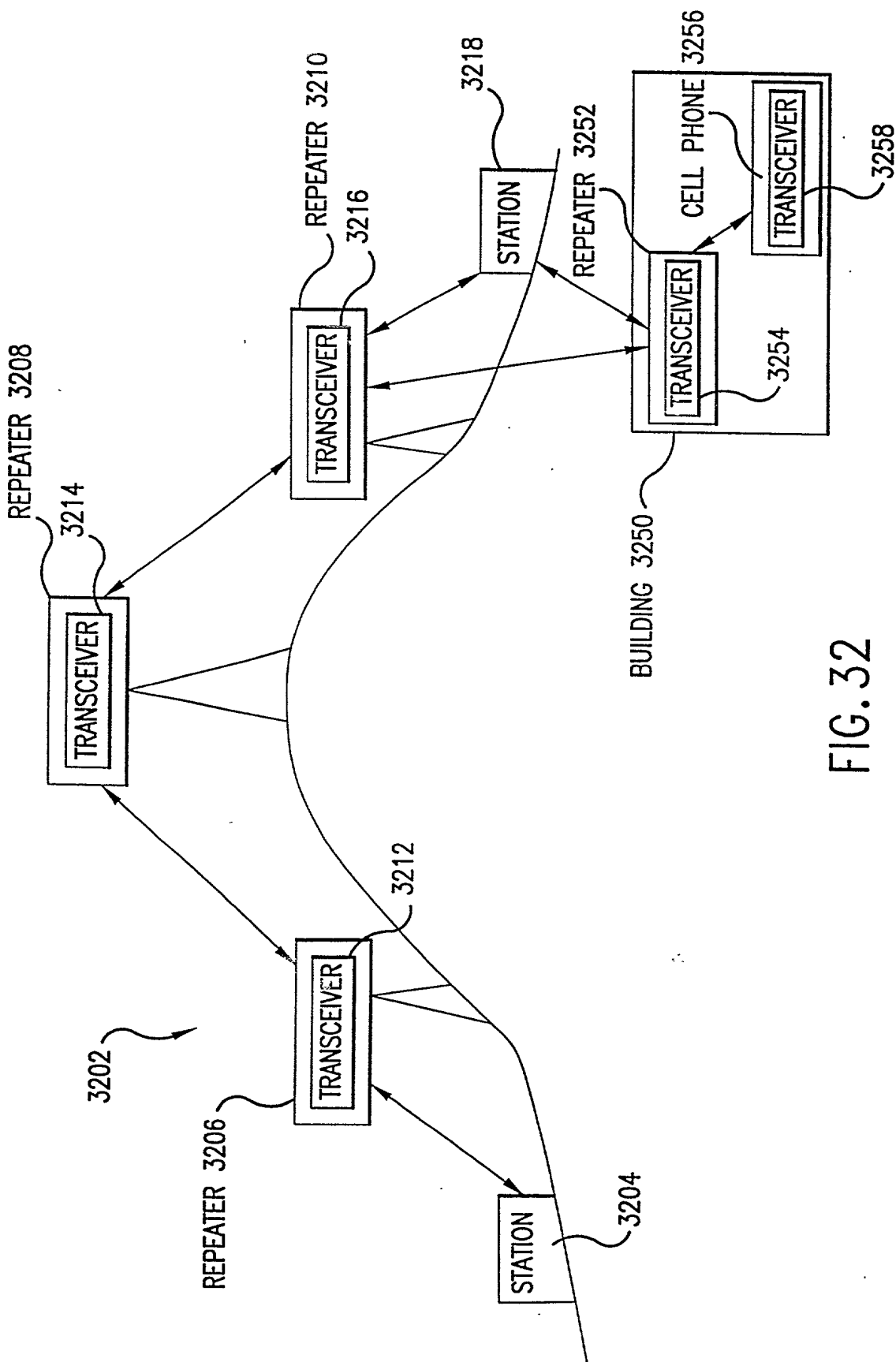


FIG. 32

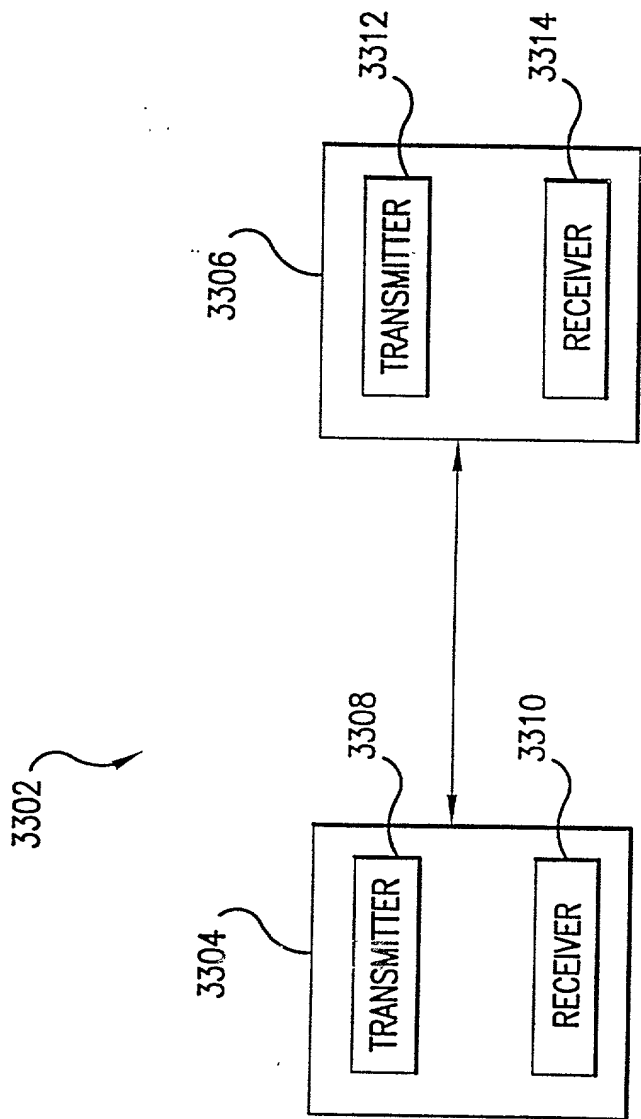


FIG. 33

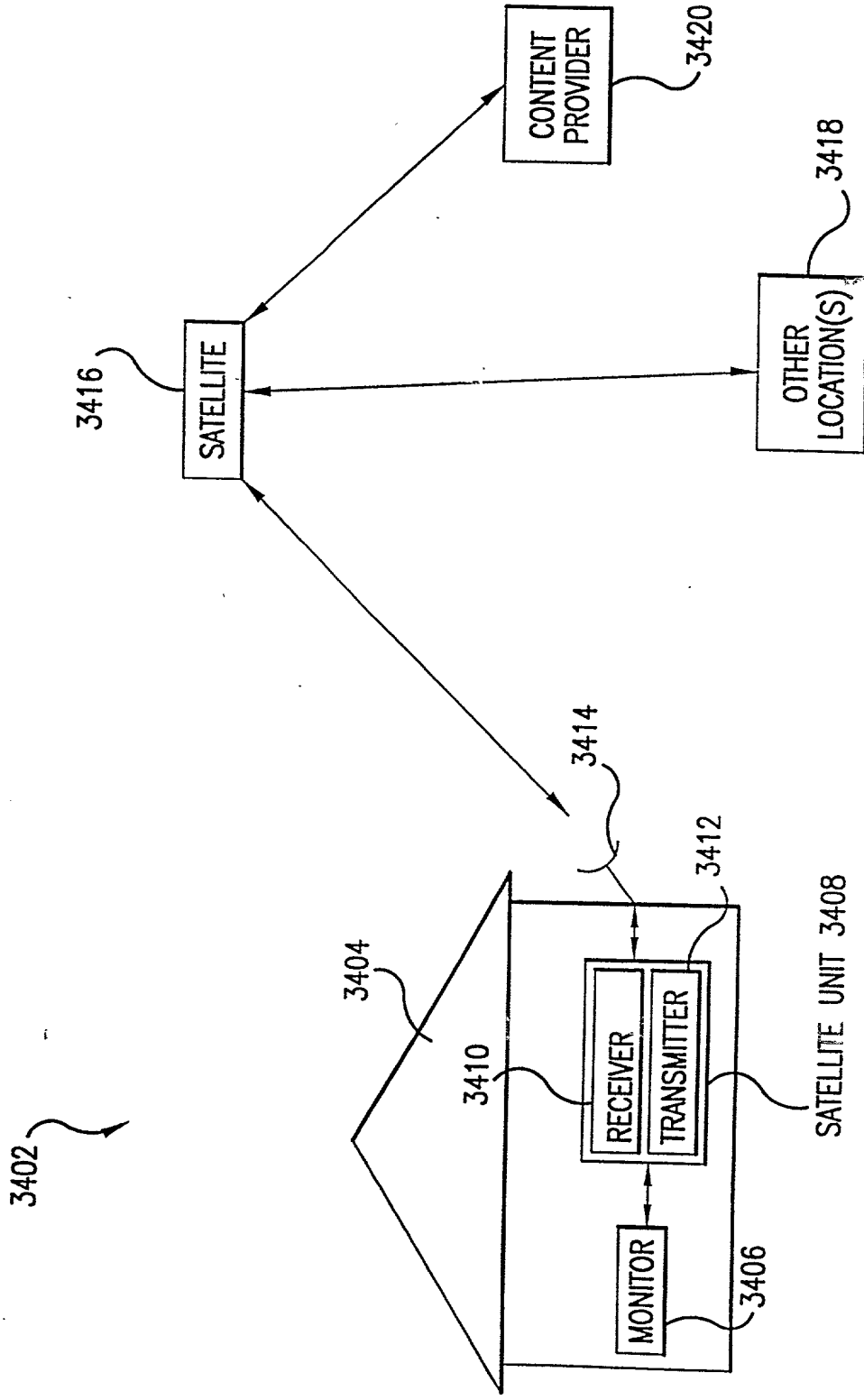


FIG. 34

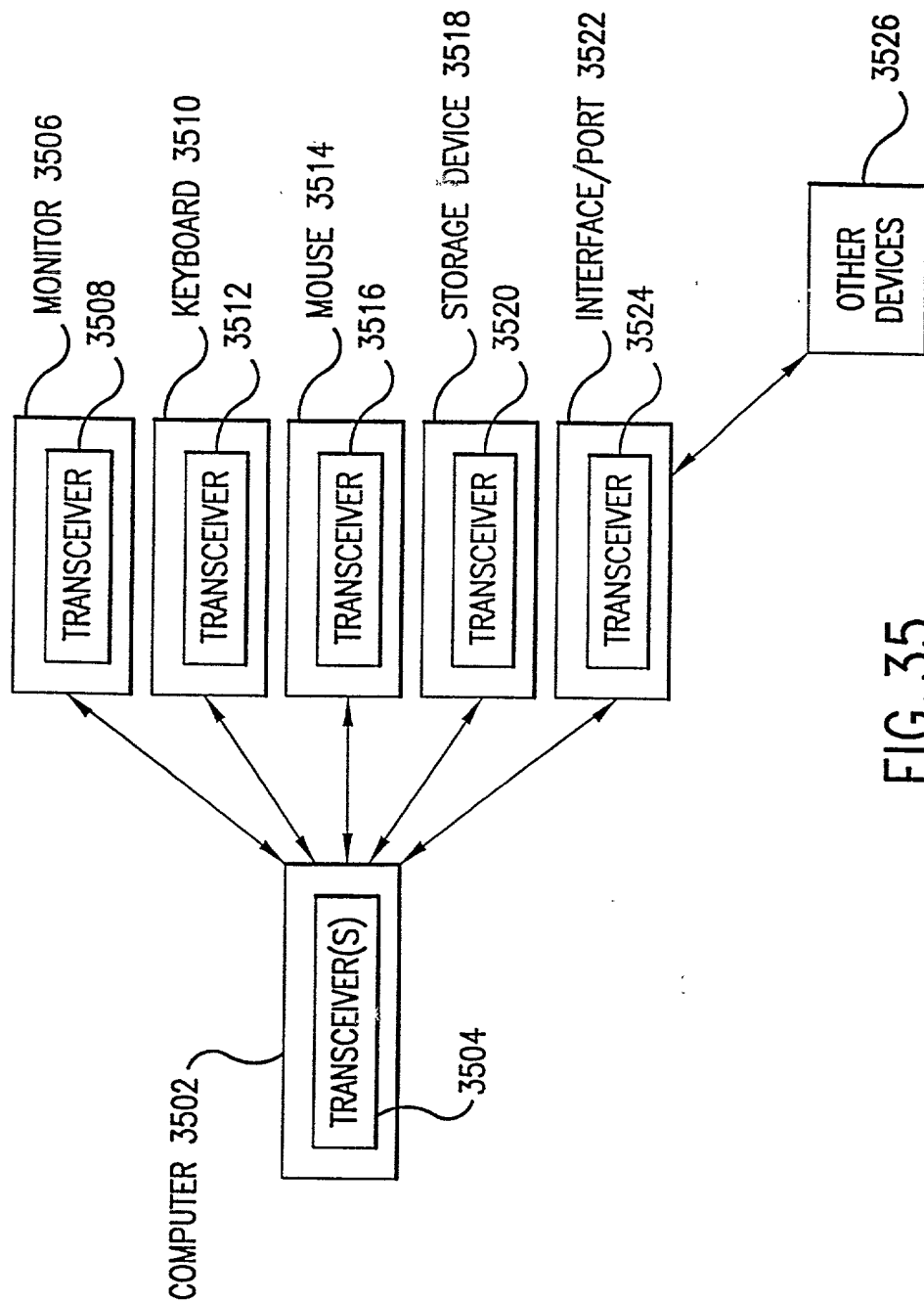


FIG. 35

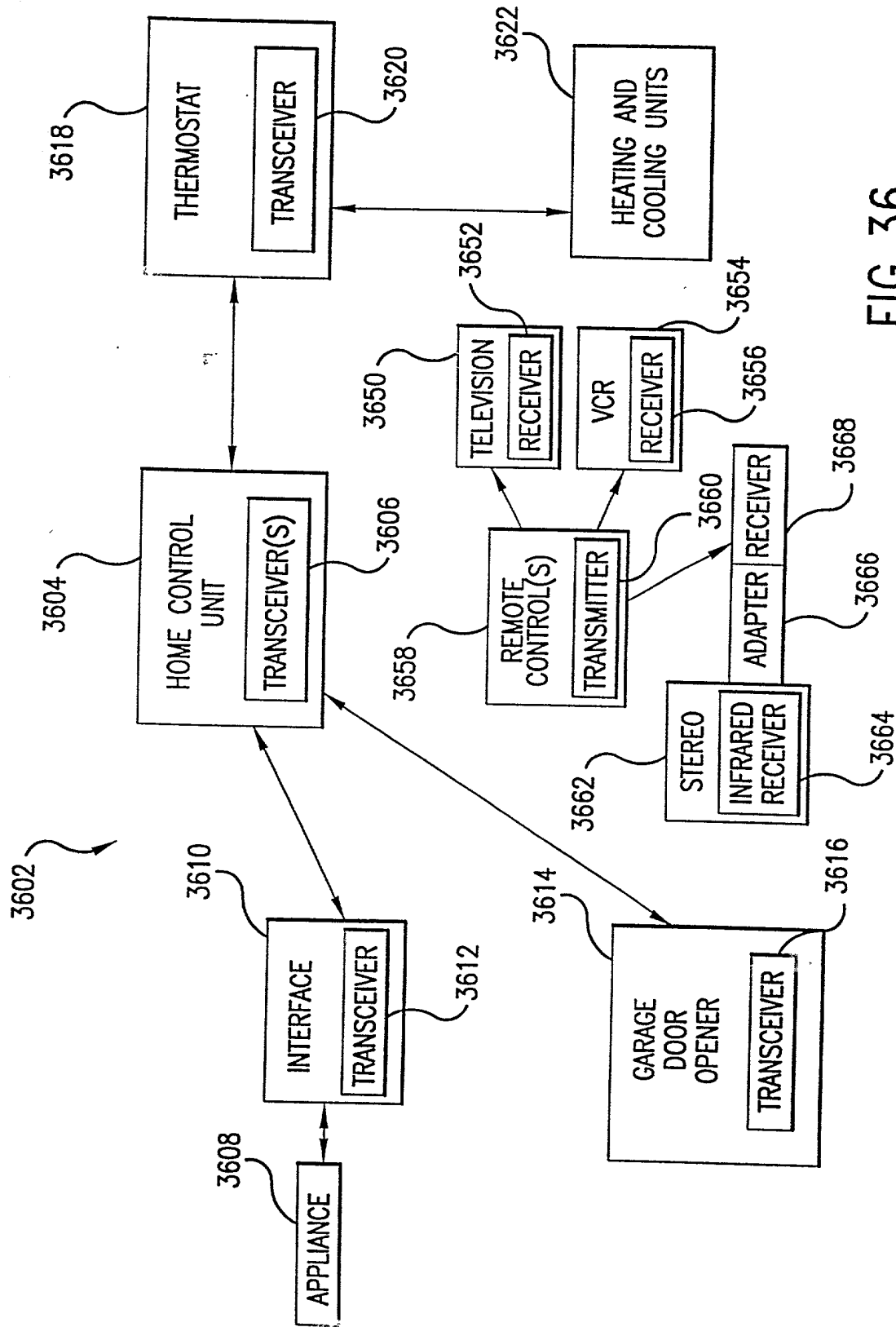


FIG. 36

3702

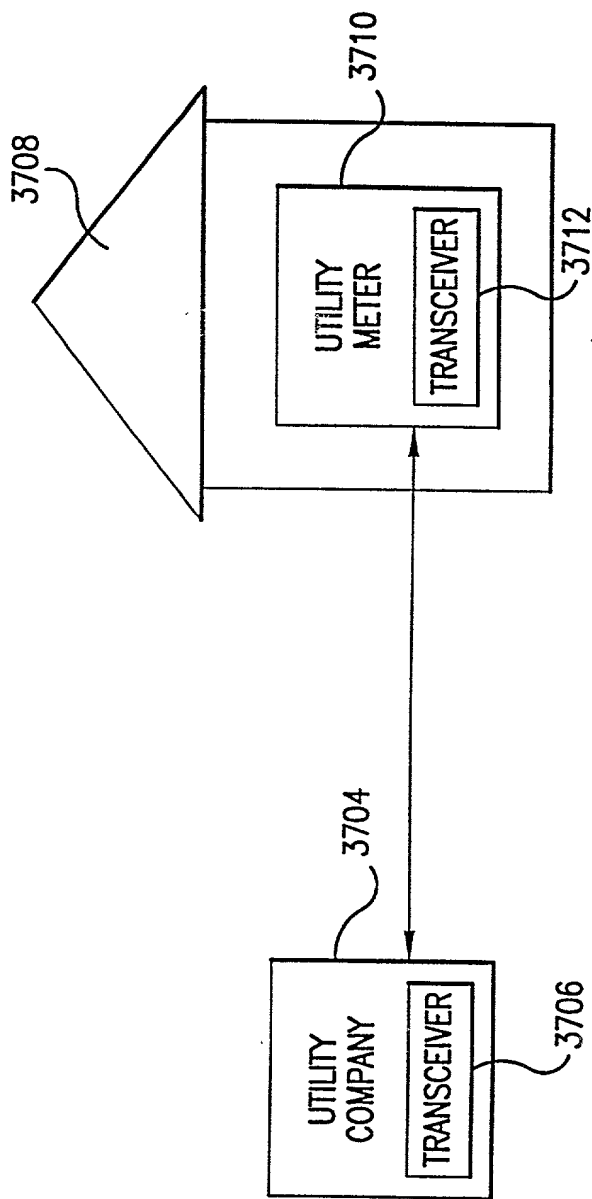


FIG. 37

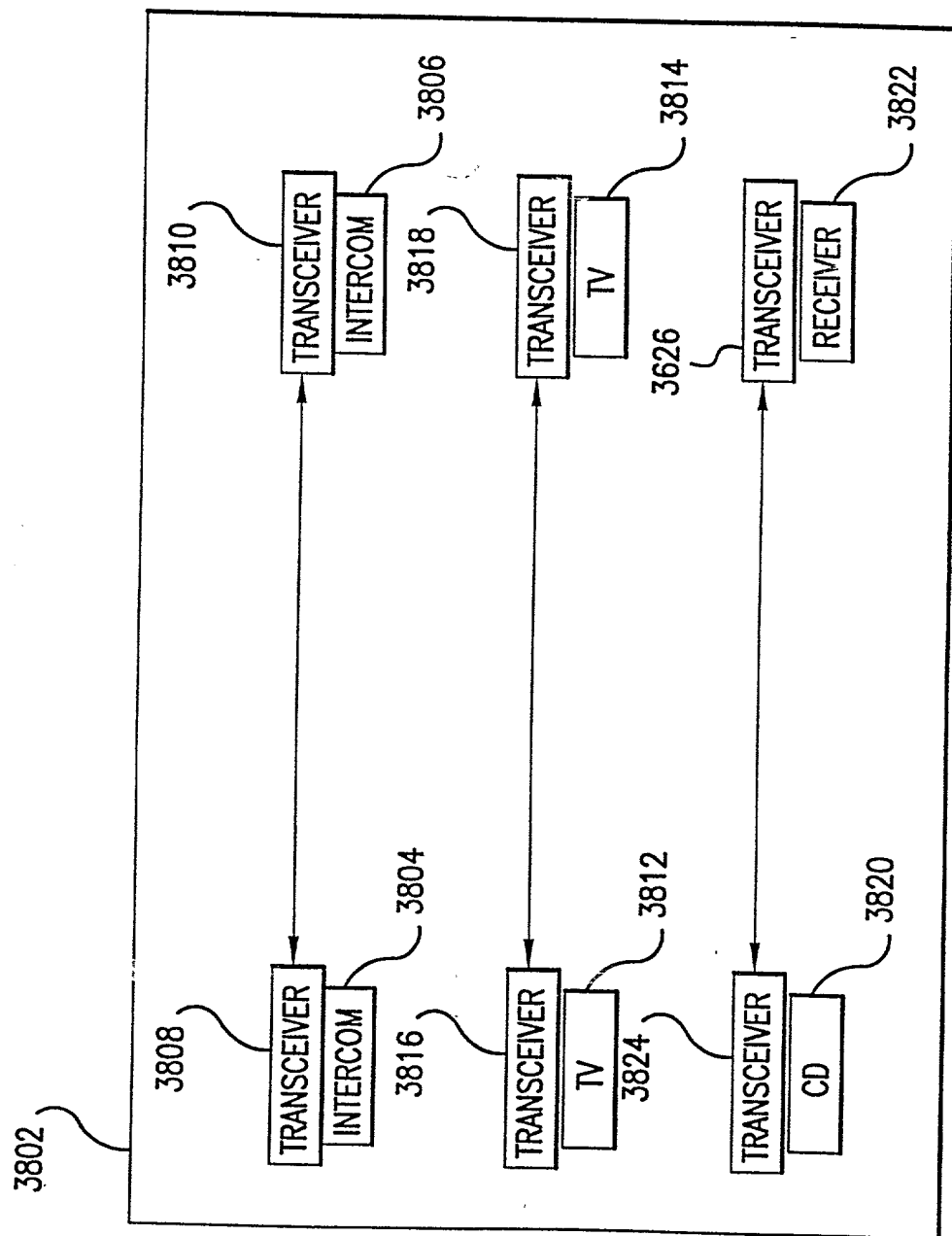
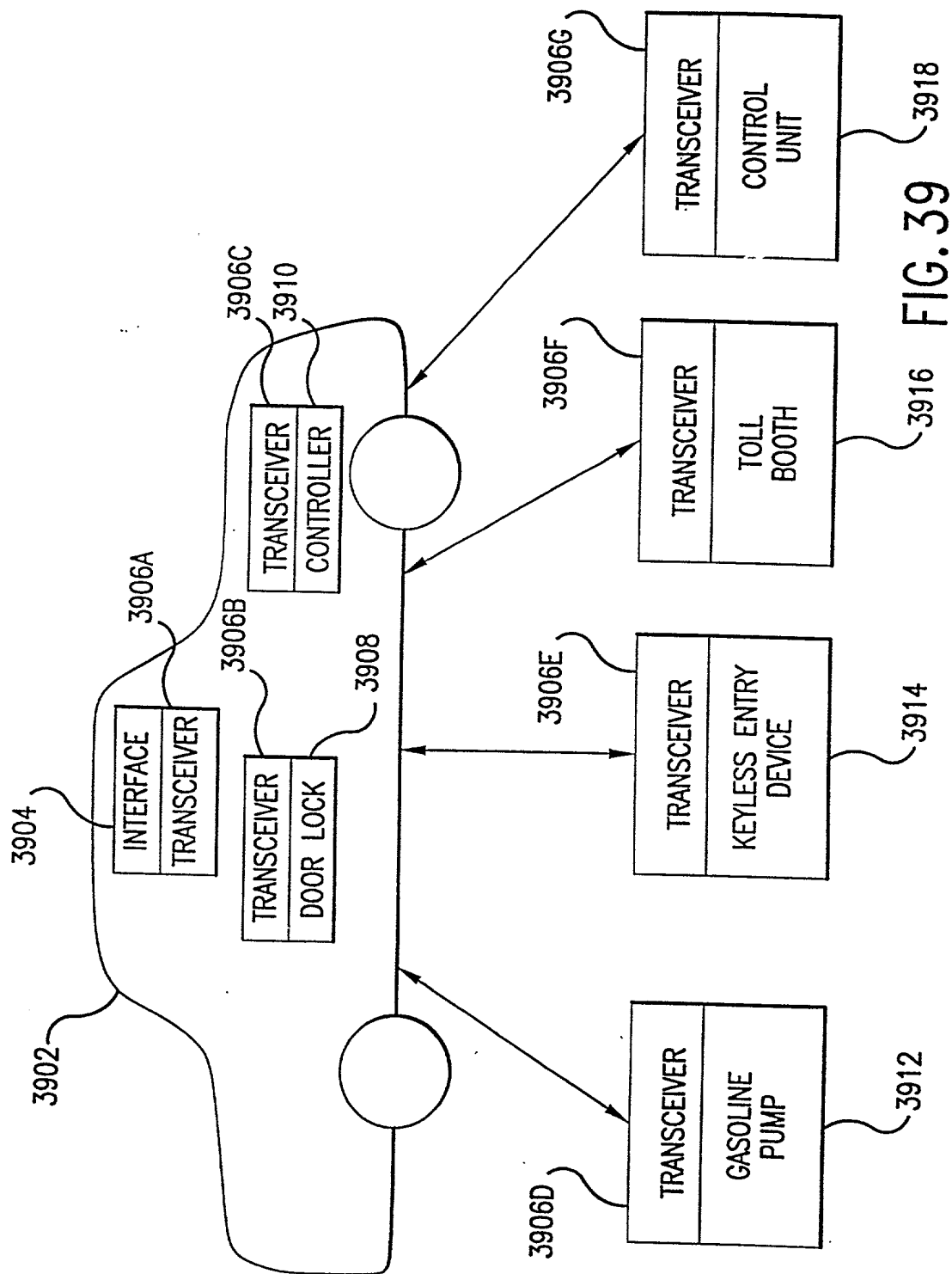


FIG. 38



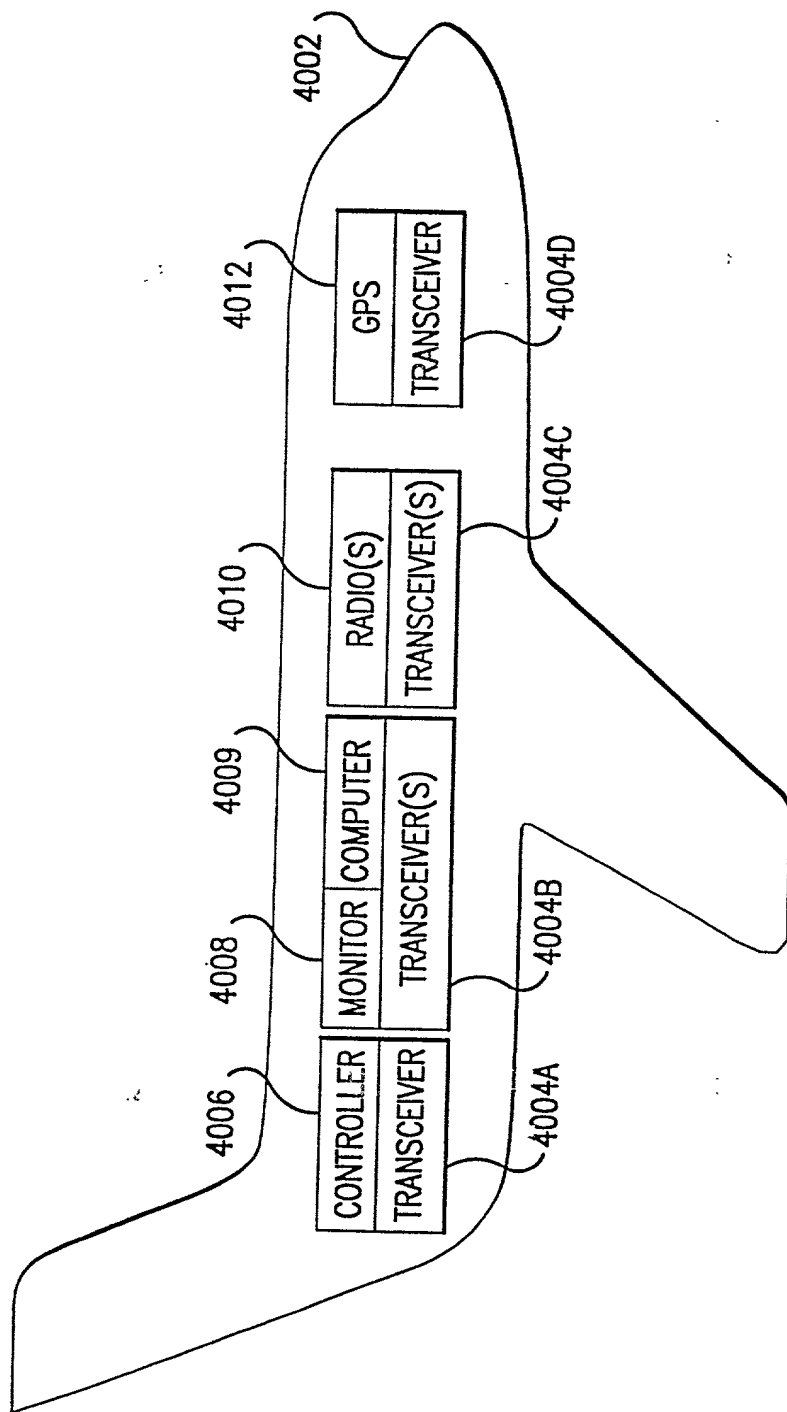


FIG. 40A

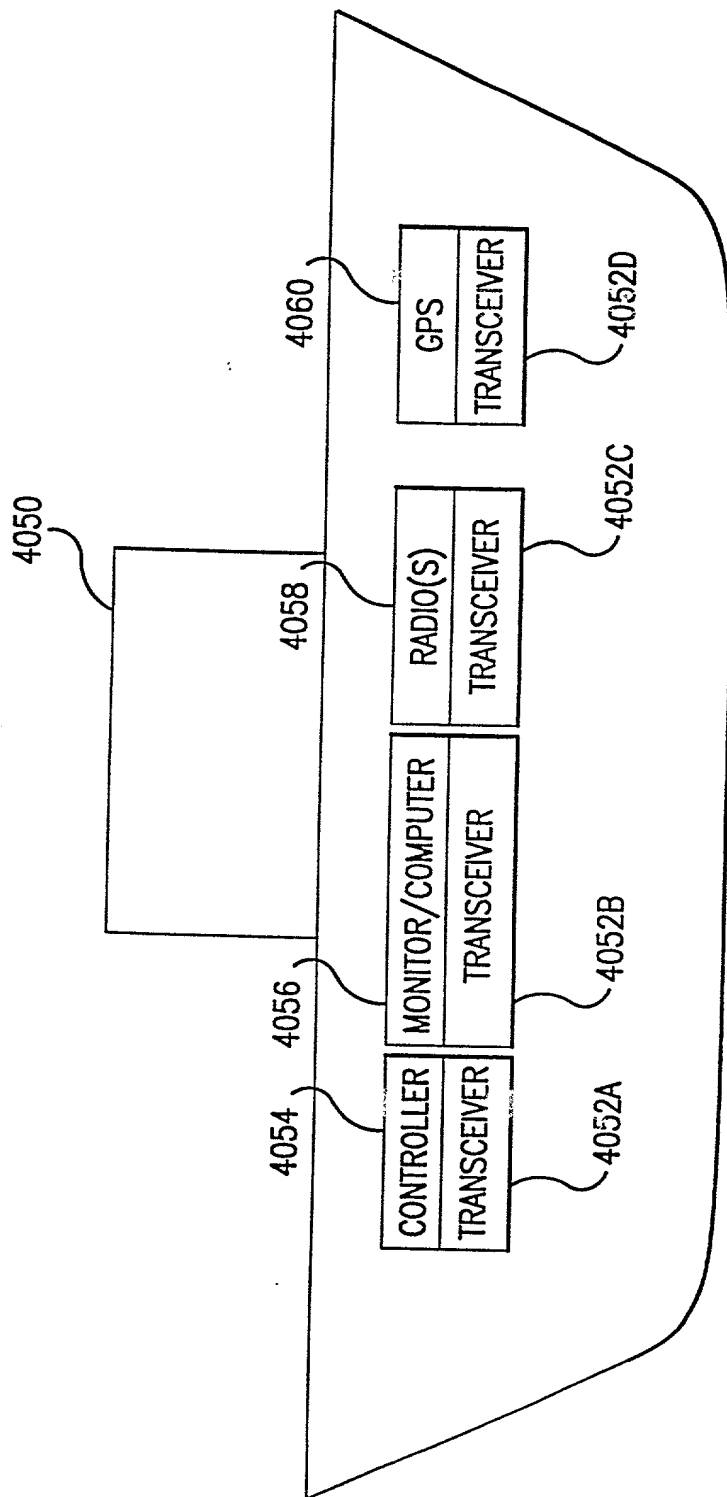


FIG. 40B

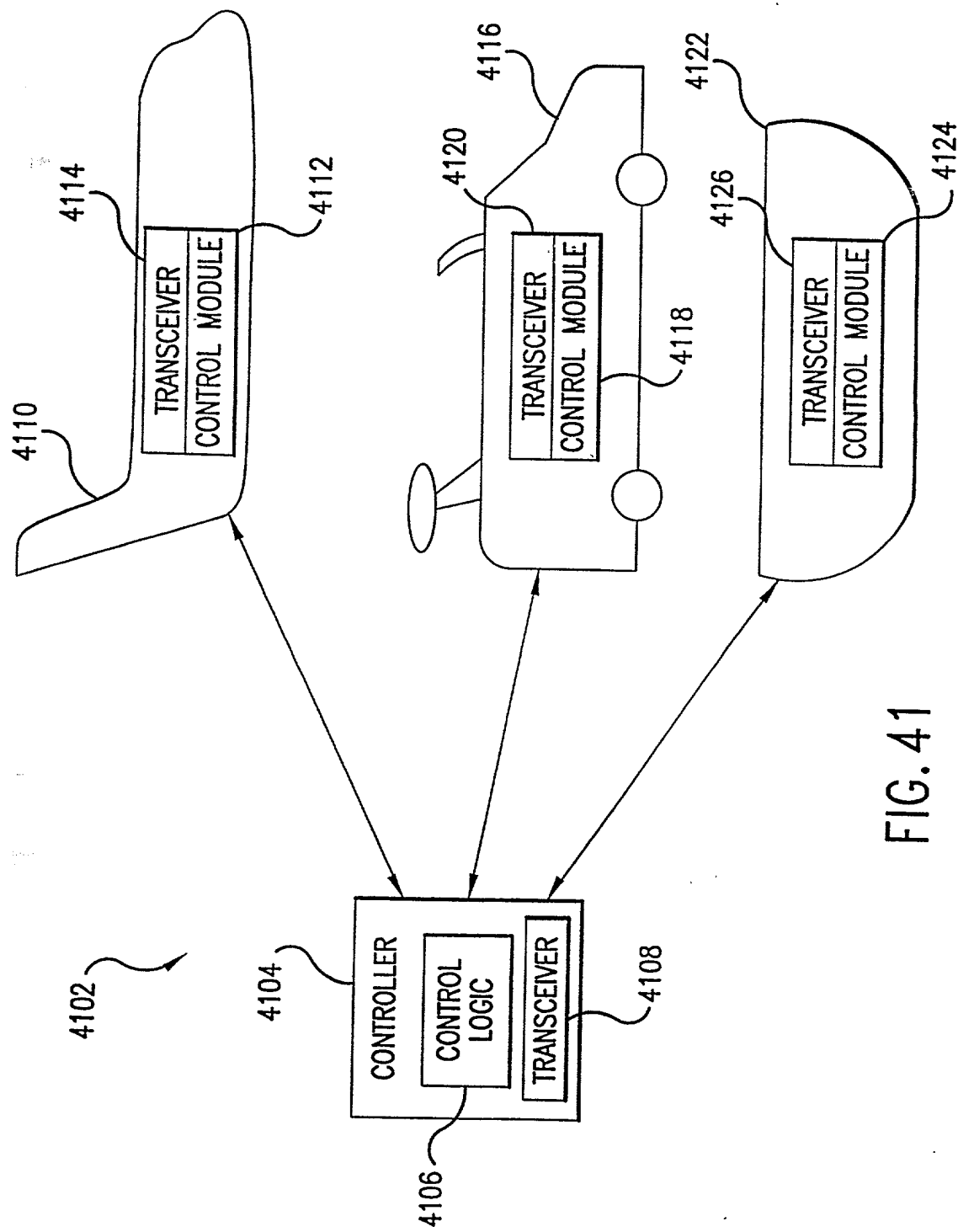


FIG. 41

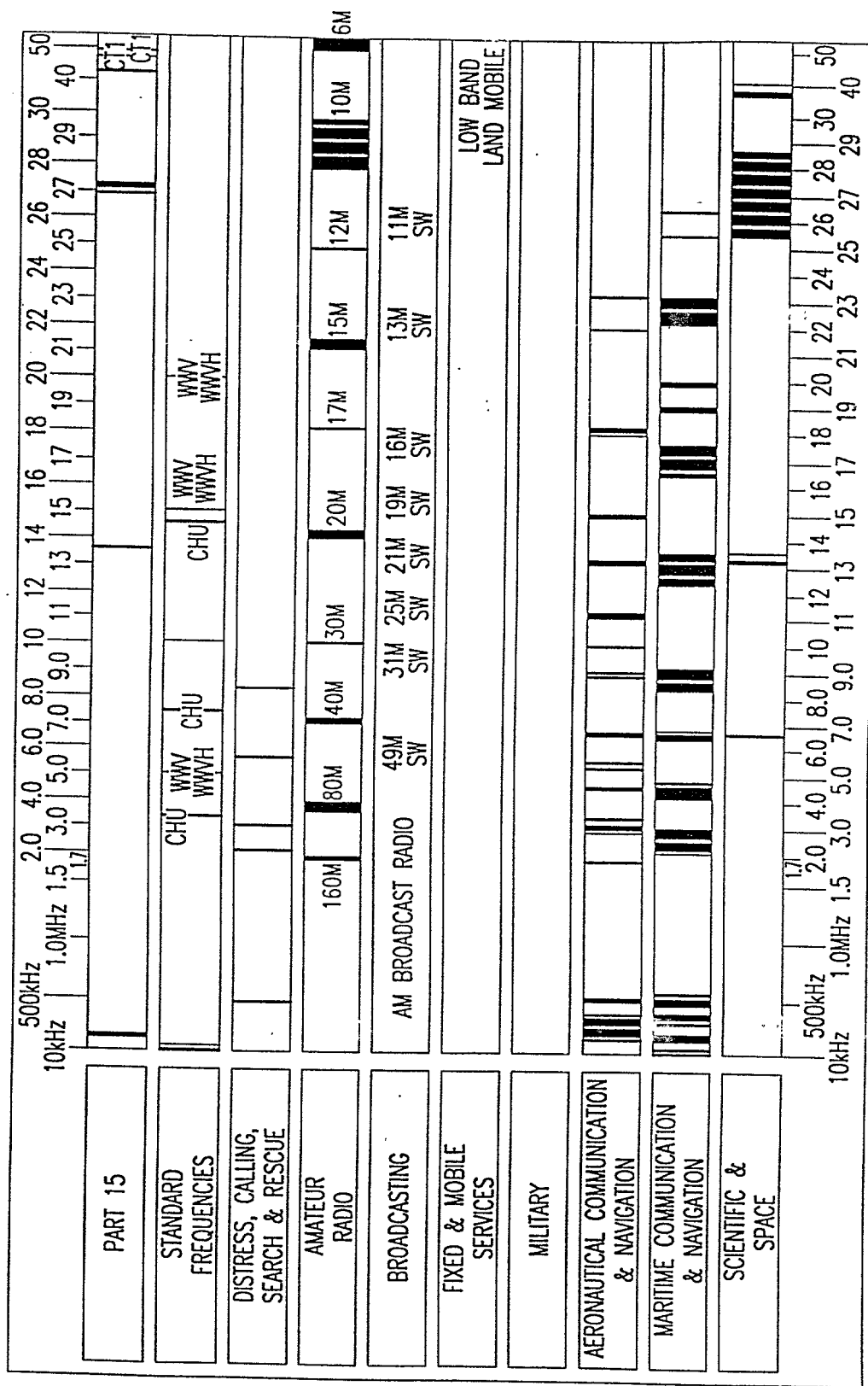


FIG. 42A

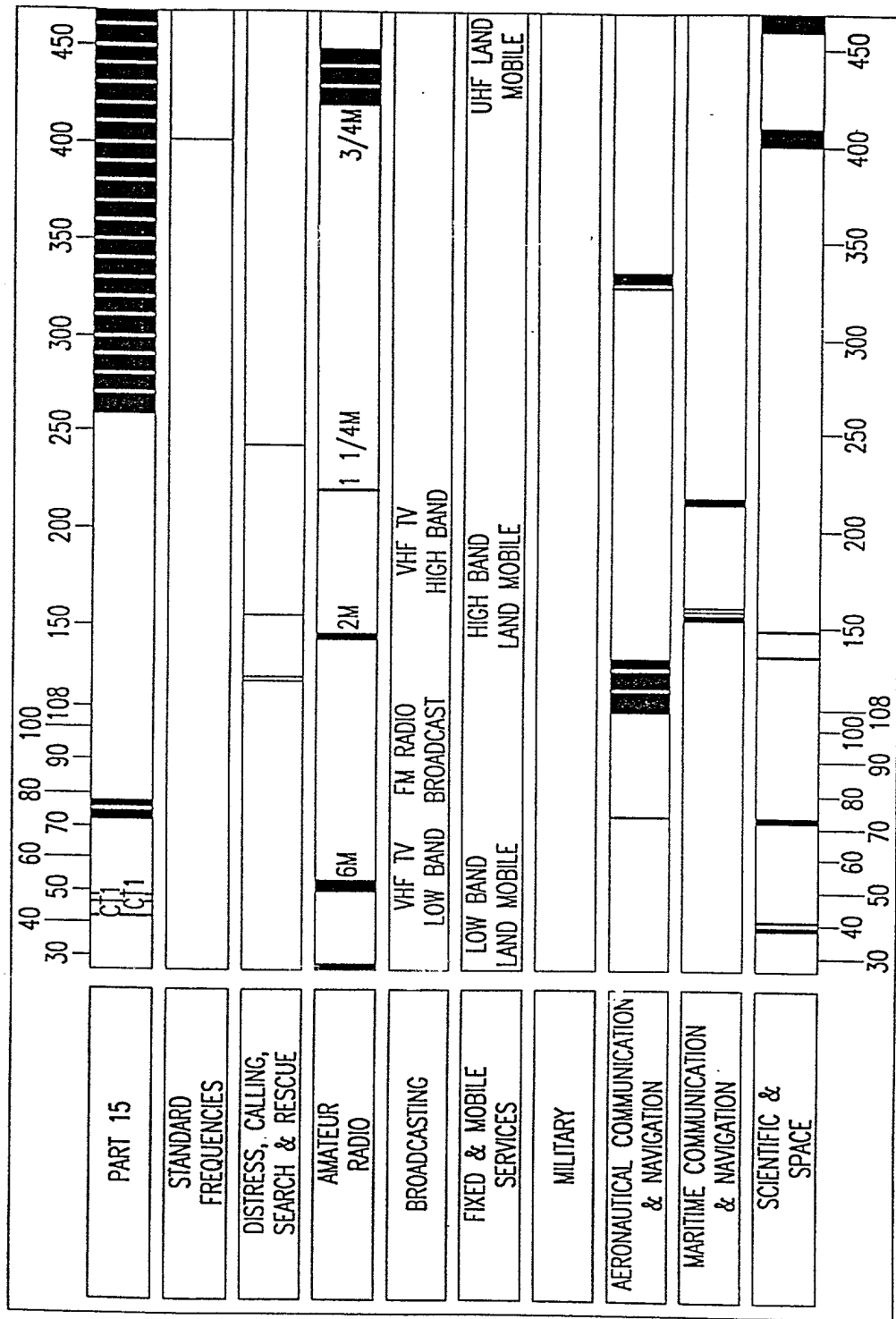


FIG. 42B

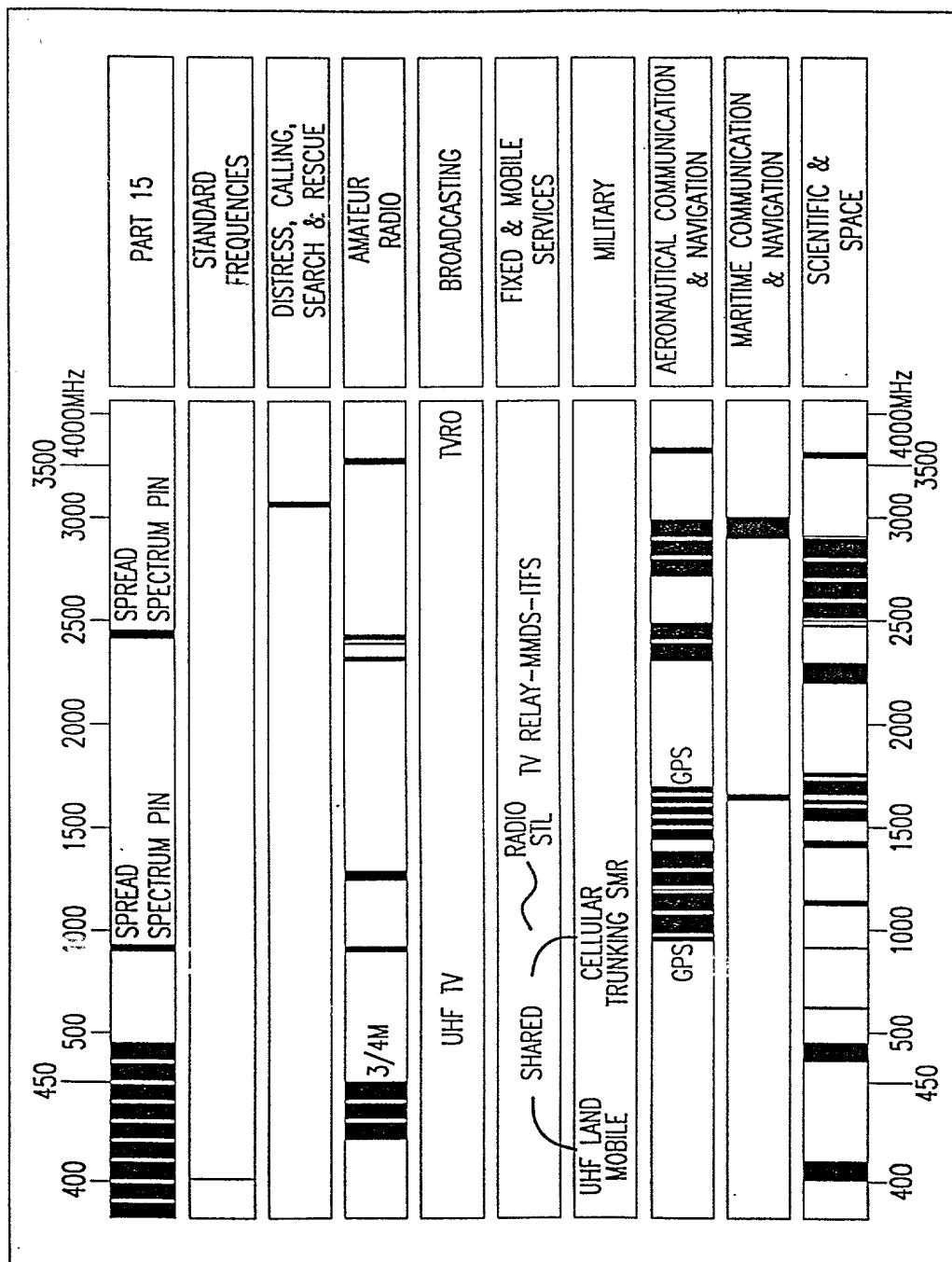


FIG. 42C

09770675.083001

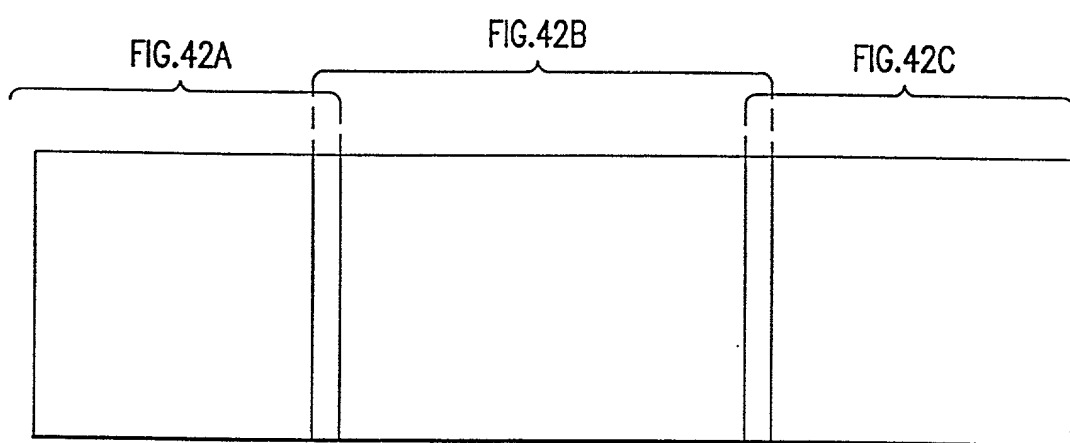


FIG. 42D

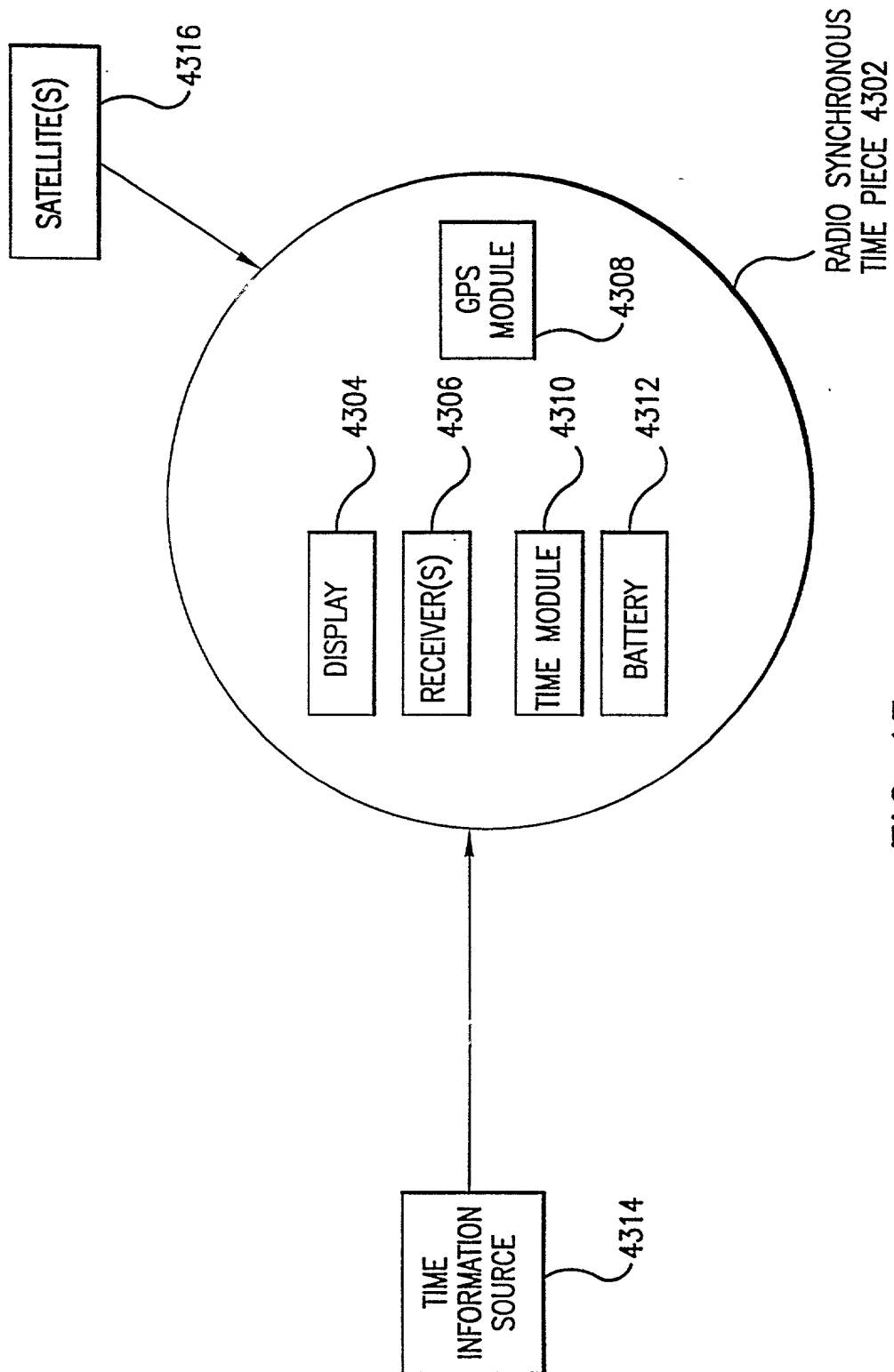


FIG. 43

TOP SECRET 5/29/2007

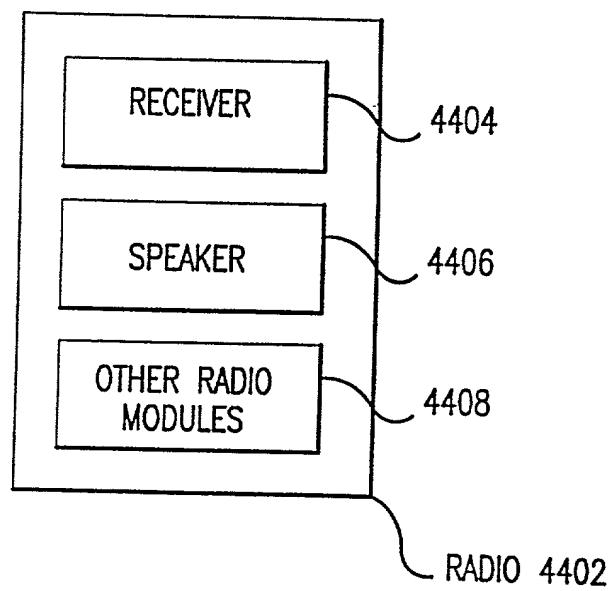


FIG. 44

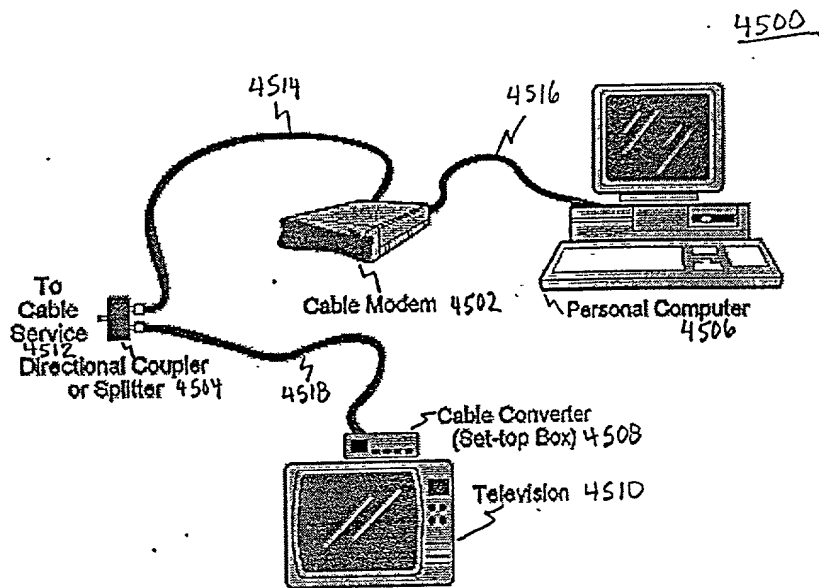


FIG. 45A

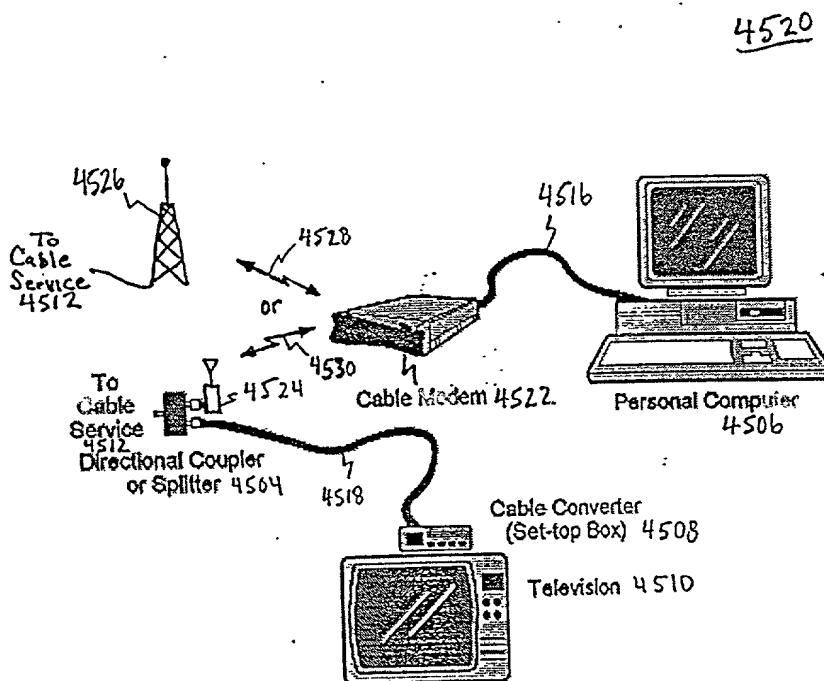


FIG. 45B

09770675.083001
FOOEB0 52907260

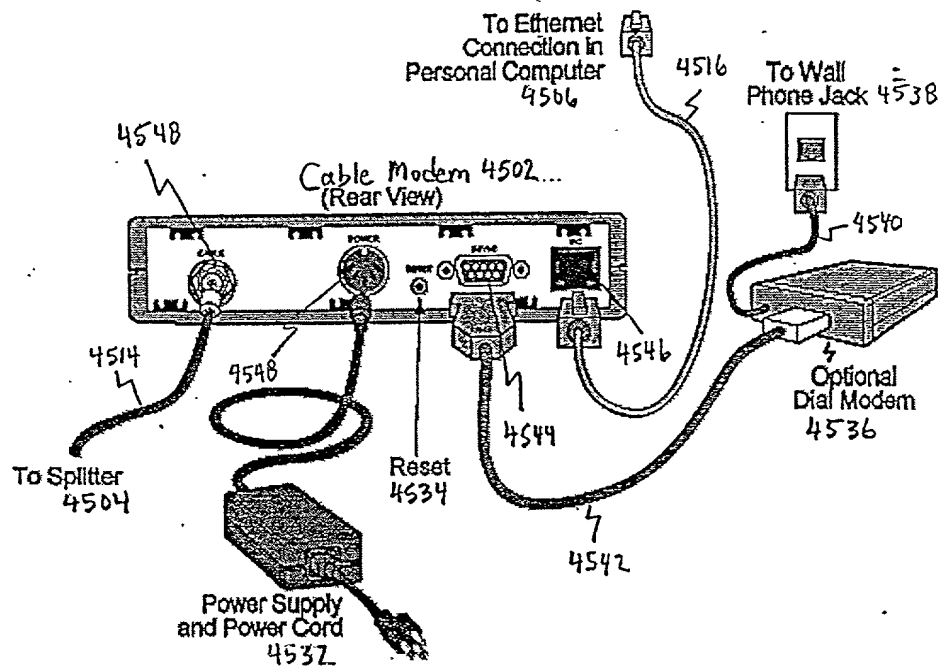
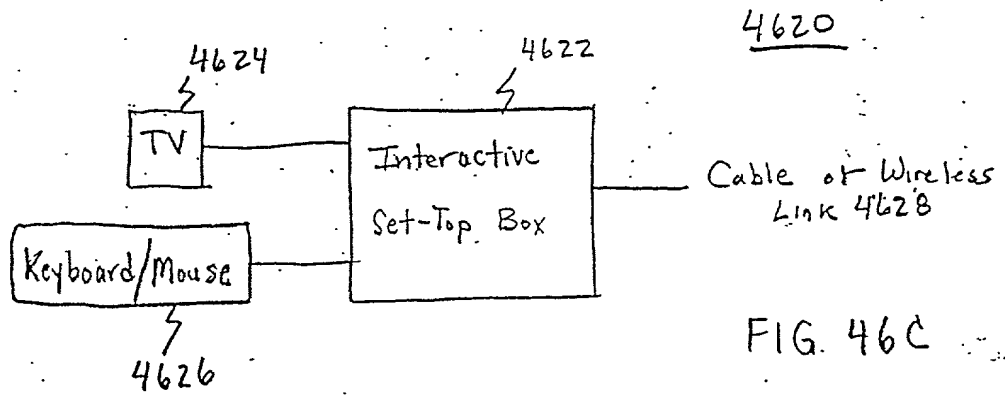
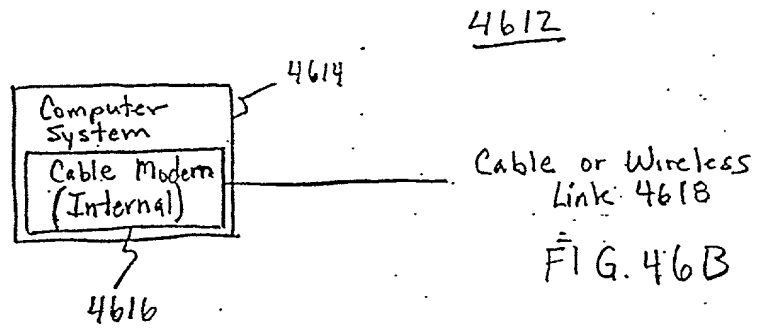
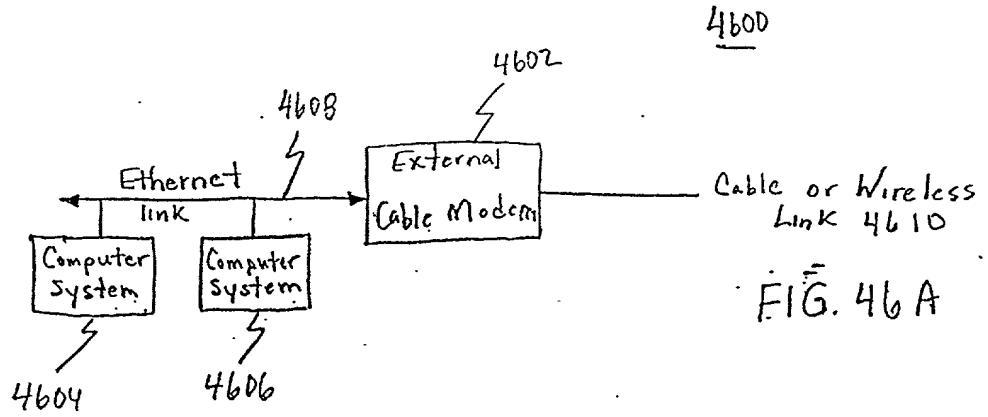


FIG. 45C



4700

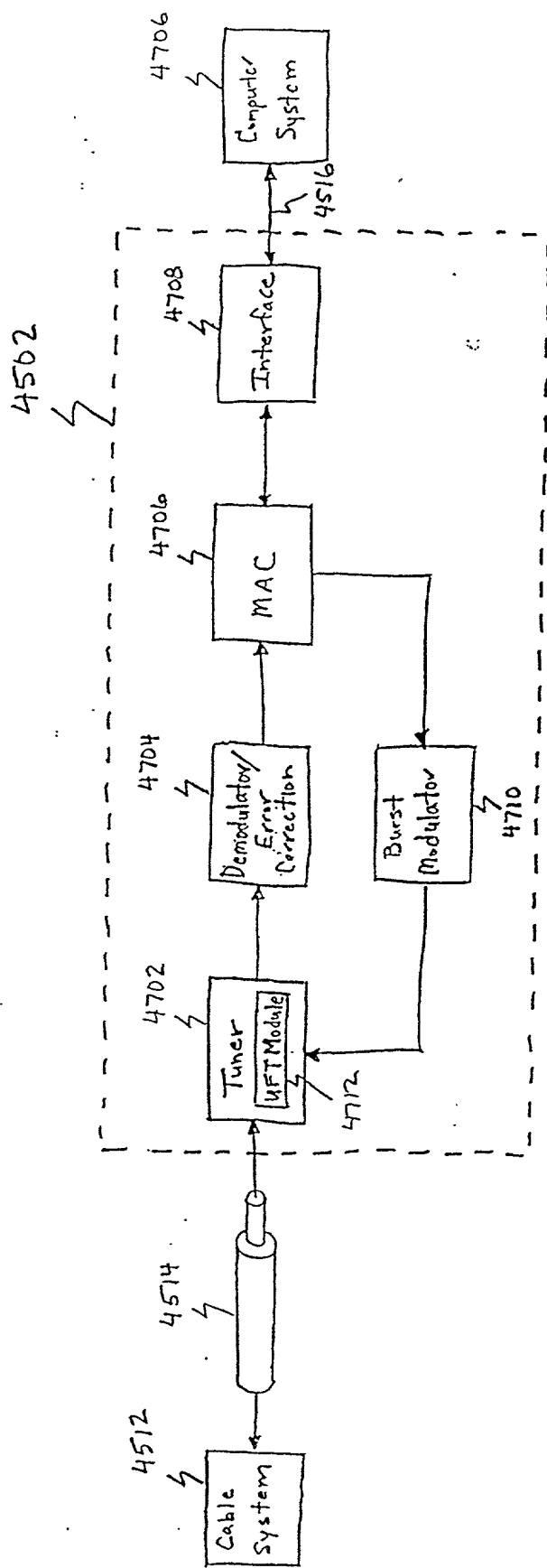


FIG. 47

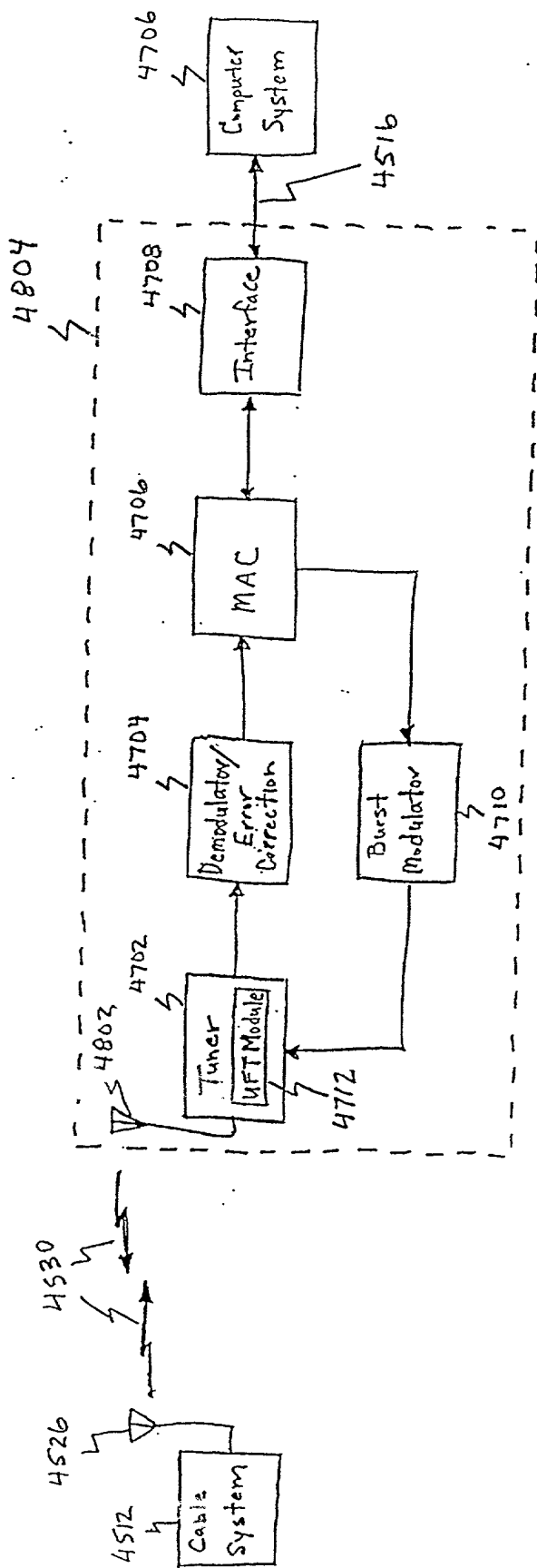


FIG. 48

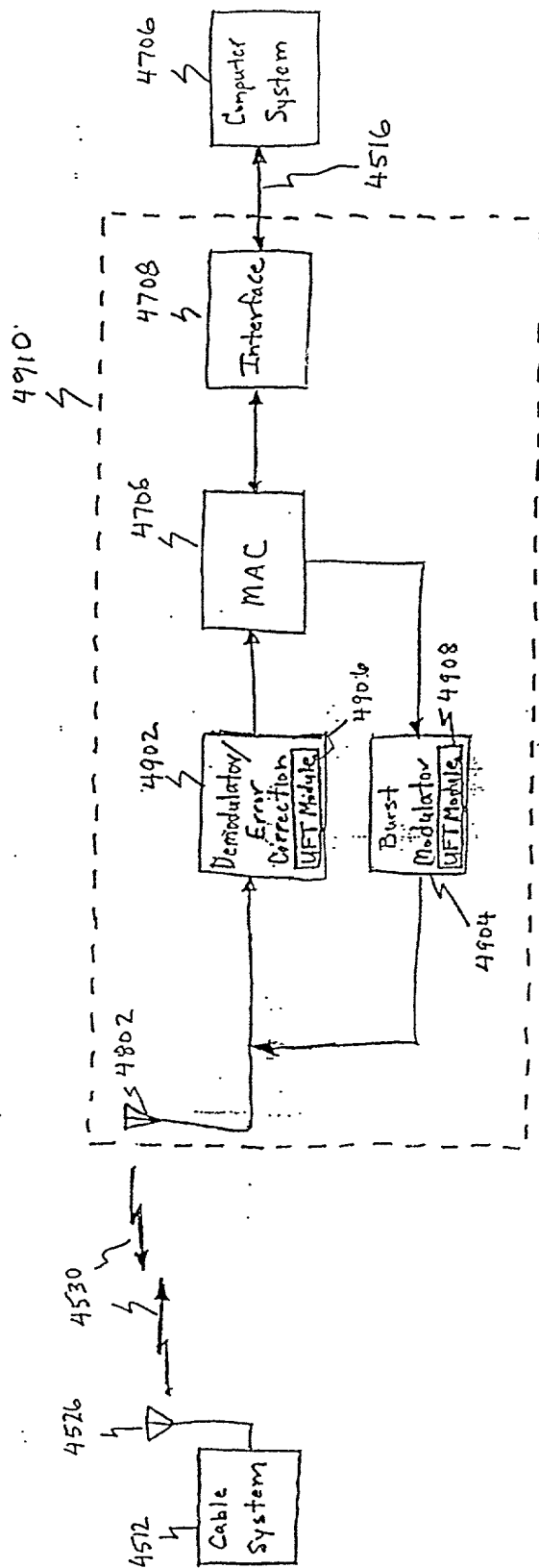


FIG. 49

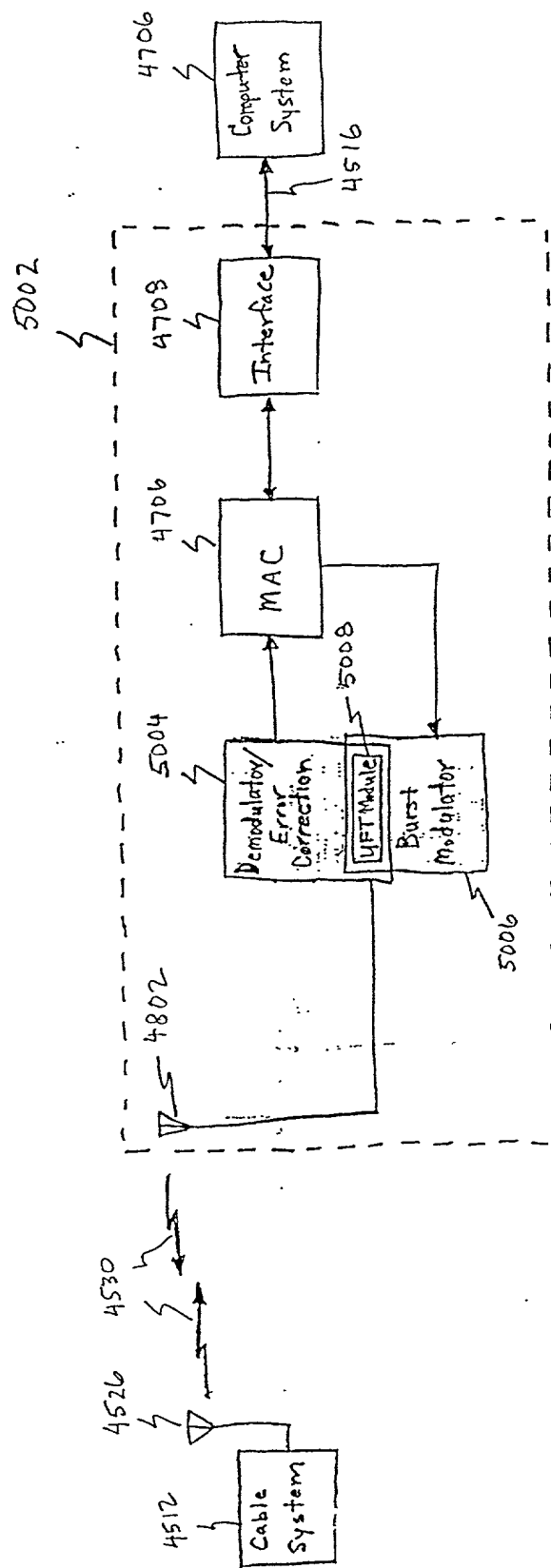


FIG. 50

5100

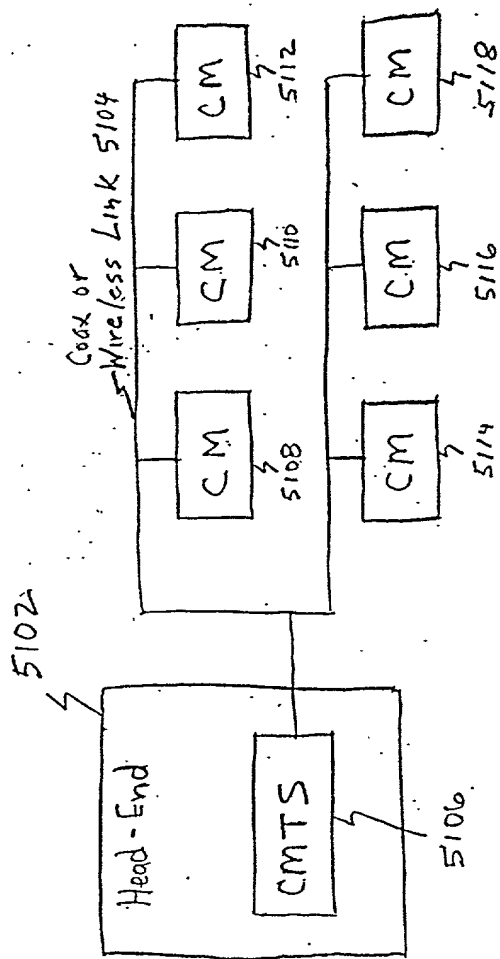


FIG. 51

CMTS 5106

Cable Modem 5108

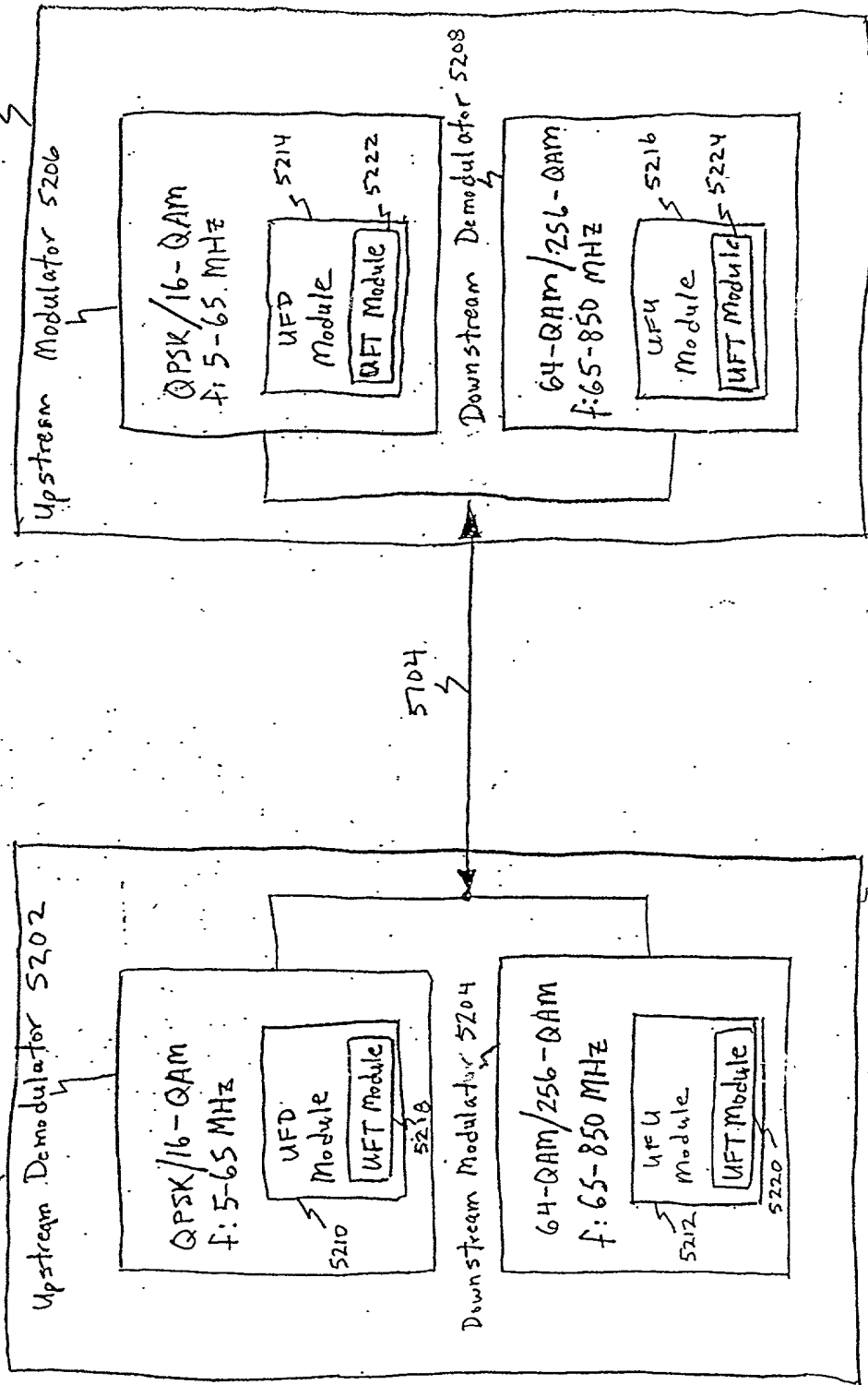


FIG. 52

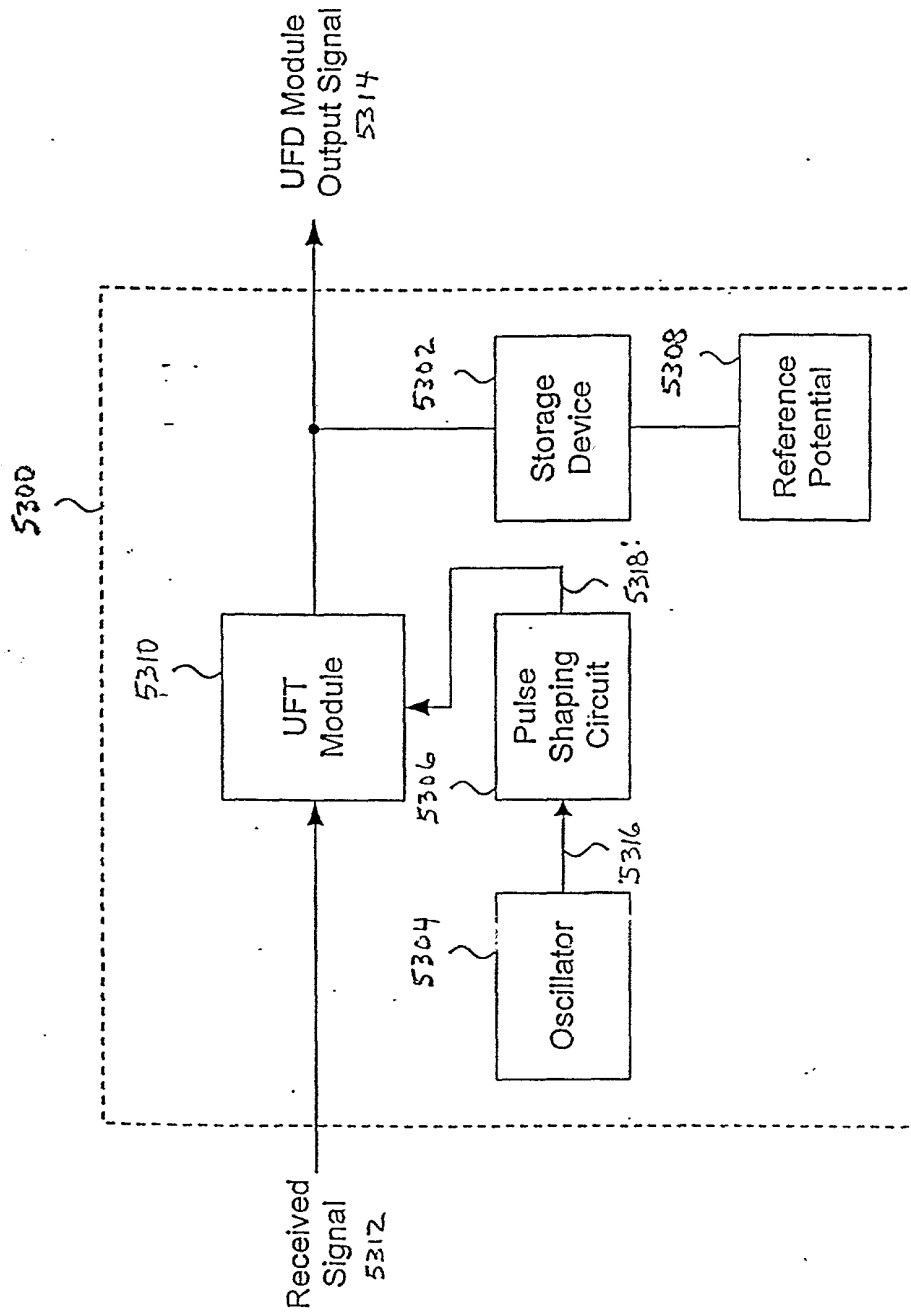


FIG. 53

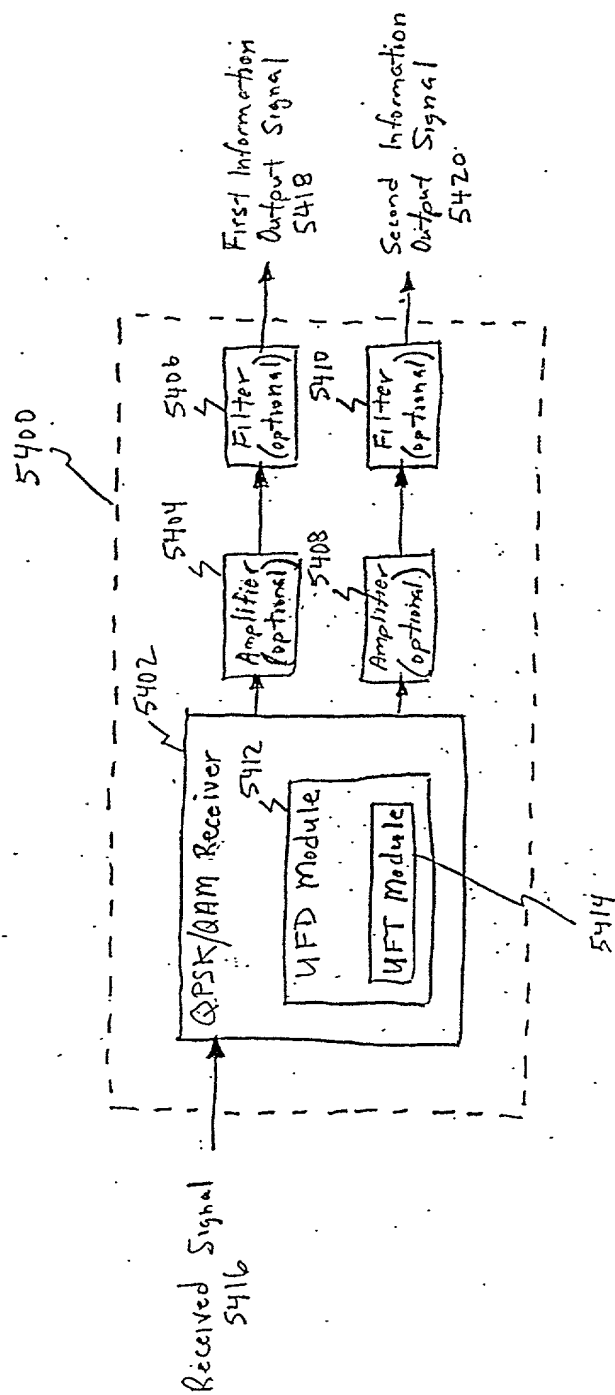


FIG. 54 A

5400

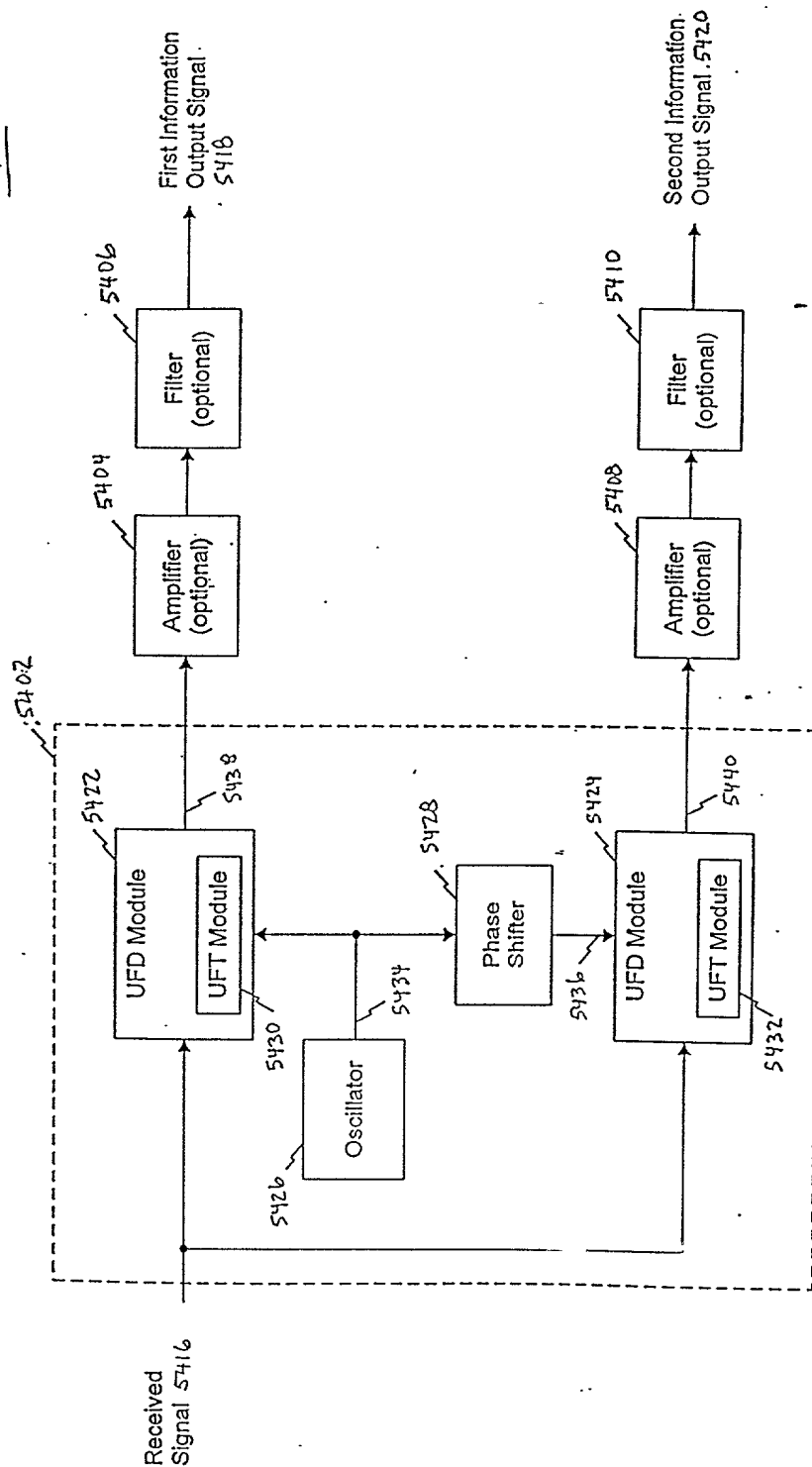


FIG. 54B

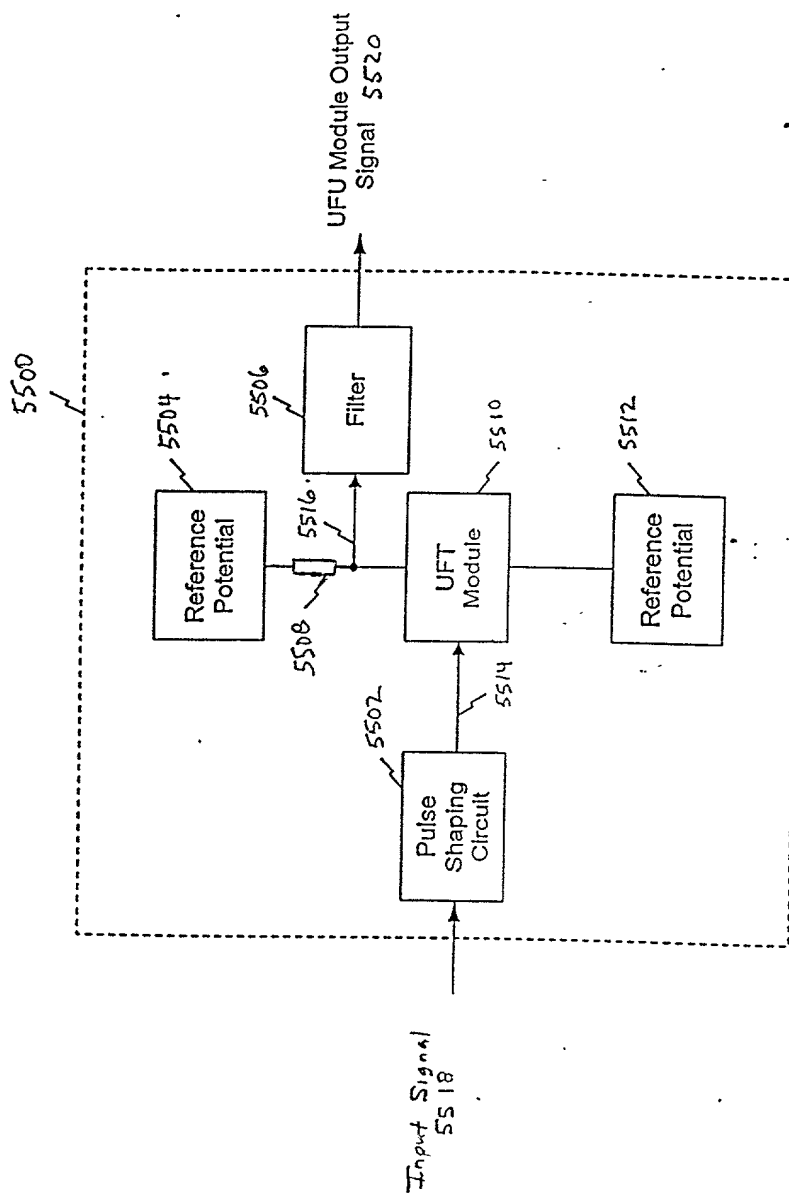


FIG. 55

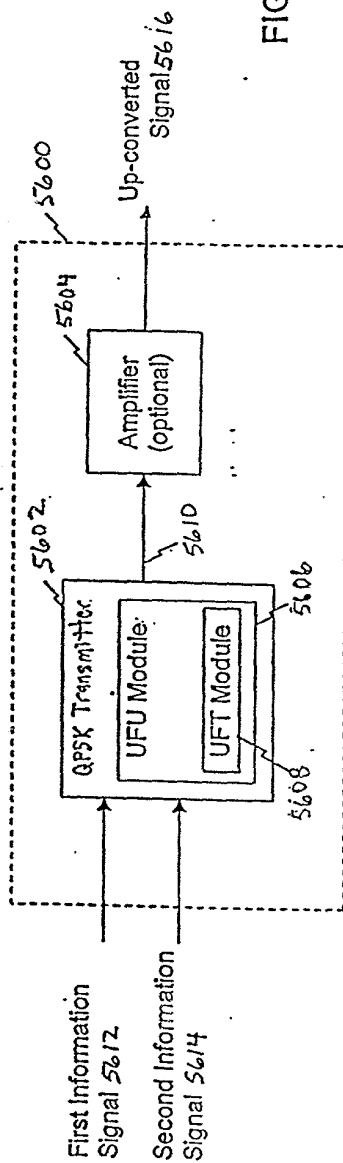


FIG. 56

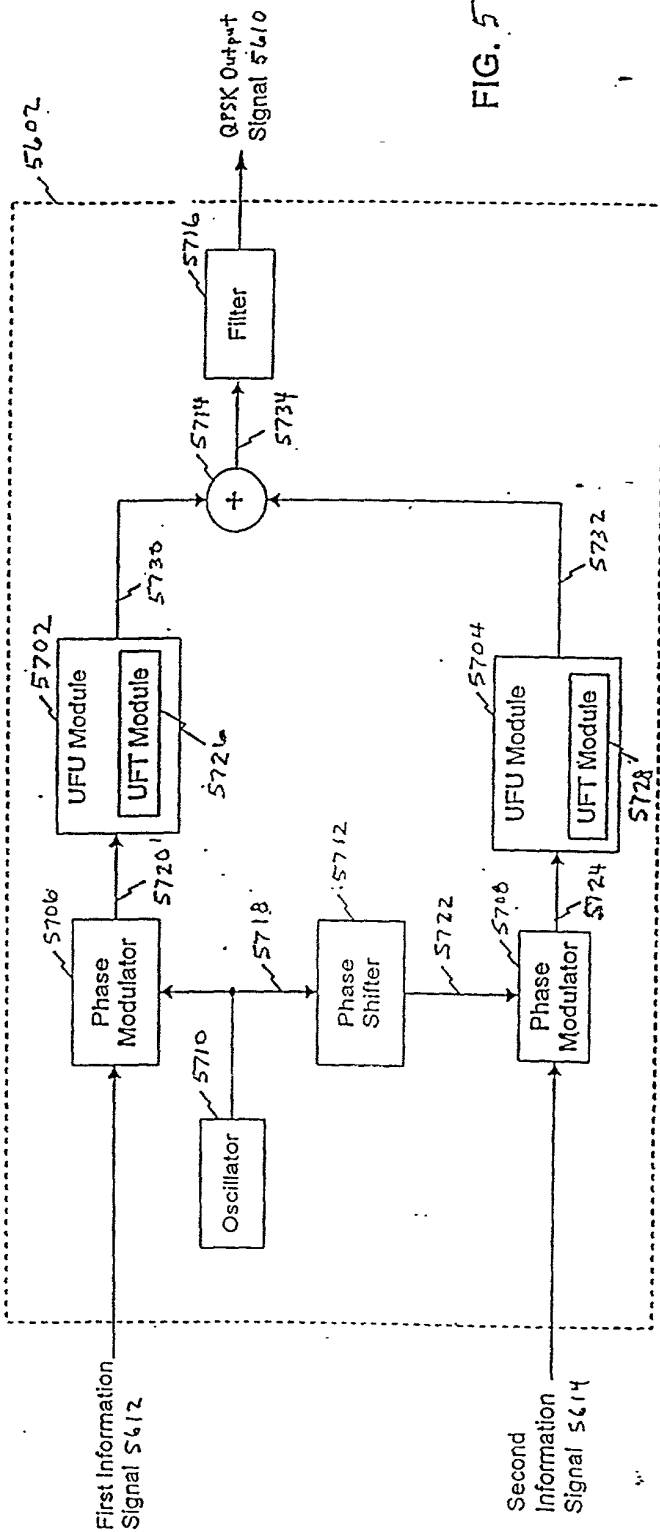


FIG. 57

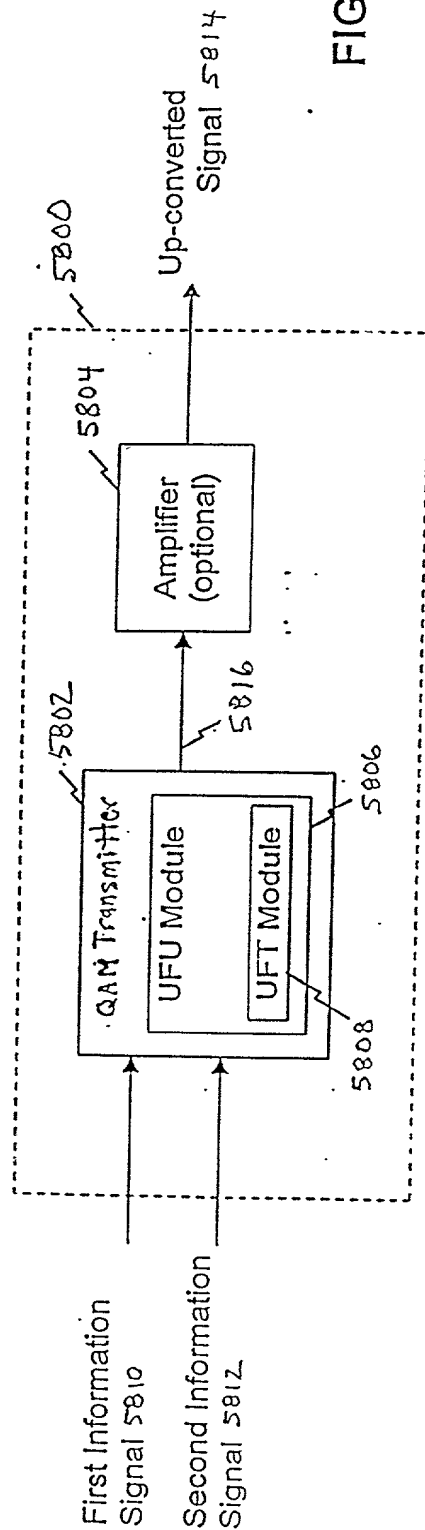
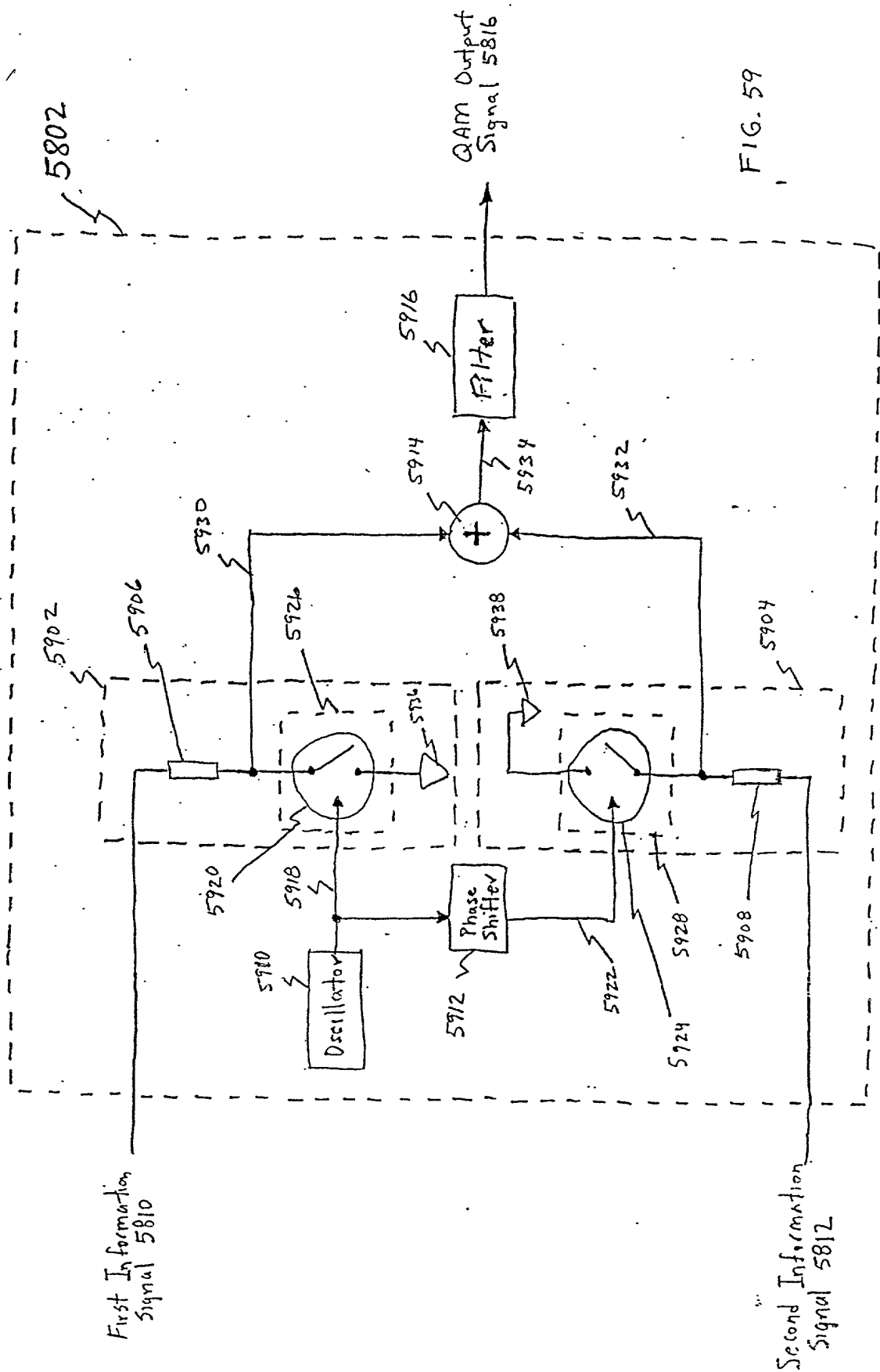


FIG. 58



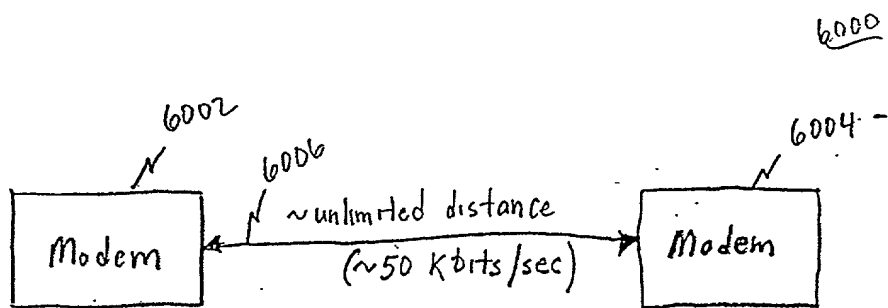


FIG. 60

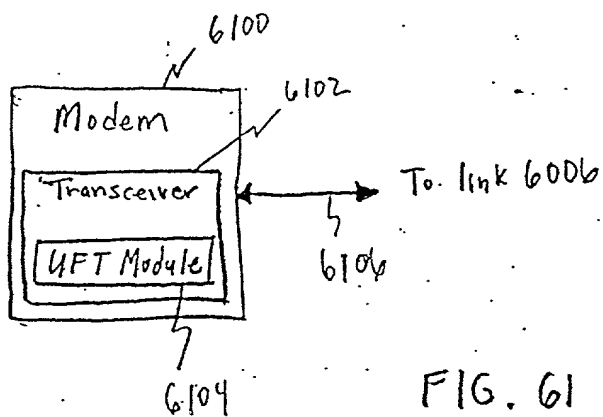


FIG. 61

09770575.00001
FIG. 60

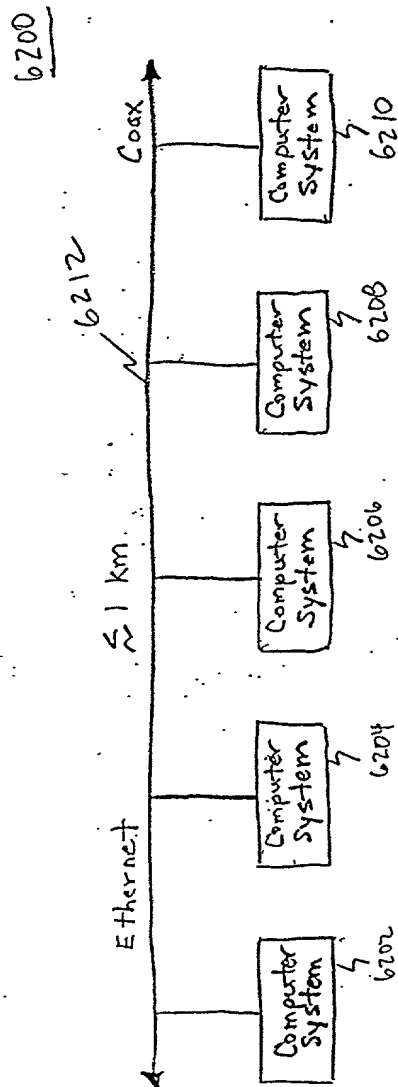


FIG. 62

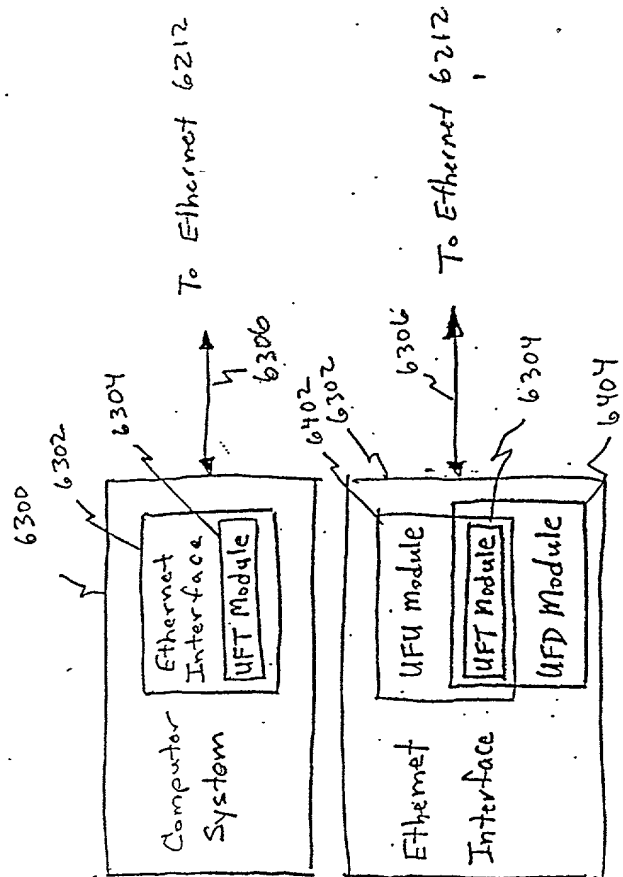


FIG. 63

FIG. 64

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T00E80" 52902260

FIG. 65

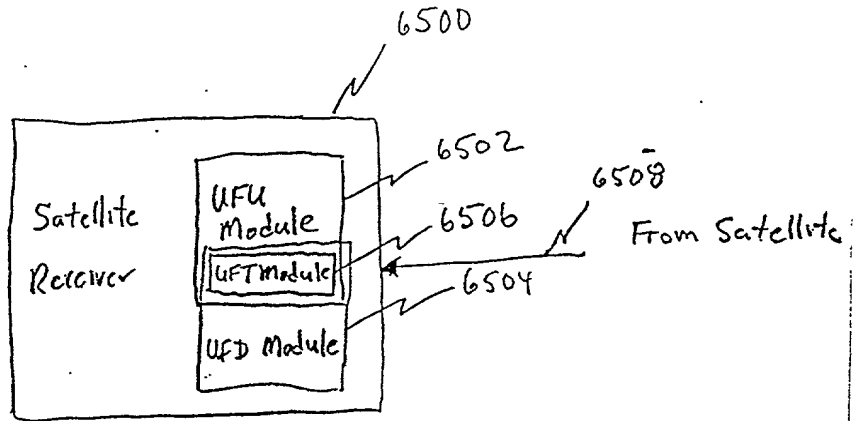


FIG. 66

